

Product Backlog

xpac - Team 16

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Problem Statement

A package manager is a standard program included on all unix-based operating systems. However, there is a lot of fragmentation among the different programs used and the different protocols and methodologies employed by each one of them; for example, within Linux itself, one can find multiple package managers being employed based on the distribution in use; aptitude, dnf, yum, YAST, pacman, portage, Homebrew and many others are well known programs used by millions of people everyday. However, the existence of multiple programs to achieve the same goal leads to repeated effort and inability to provide a standardized support. We aim to solve this problem by developing a single do-it-all solution for package management across all standard unix-based operating systems, by leveraging the standardization of POSIX standards and developing an easy-to-use solution, which hopefully will someday become the standard for package managers.

Background Information

- **Audience**

A package manager is a tool that enables users to maintain packages for applications and other softwares. xpac primarily targets developers who work on multiple platforms, enabling them to use a single tool to manage their packages across all the platforms. A typical scenario for our user would include a developer who uses different systems for use at work and at home.

- ***Similar Platforms***

There are package managers for every operating system, catering to the needs of the specific operating system. However, a solution that caters to a multitude of operating systems does not exist yet.

- ***Limitations of Existing Platforms***

The biggest hurdle with existing package managers is that they cater to the specific operating system they are built for. As already mentioned in the problem statement, various distributions for Linux have their own package managers and this creates a system which is inconsistent, with every operating system defining its own set of rules for the package manager that runs on it. This is a deterrent factor in consistency and uniformity, thereby, preventing automation.

Functional Requirements

1. As a user, I would like to have the ability to connect to the server which hosts repositories.
2. As a user, I would like to have the ability to know the packages hosted by the server.
3. As a user, I would like to have the ability to know the versions available of a particular package.
4. As a user, I would like to have the ability to install packages.
5. As a user, I would like to have the ability to list the packages already installed using xpac.
6. As a user, I would like to have the ability to update the software database.
7. As a user, I would like to view if there are any updates available for the packages installed.
8. As a user, I would like to have the ability to update packages.
9. As a user, I would like to have the ability to do a full software update.
10. As a user, I would like to have the ability to delete packages.
11. As a user, I would like to have the ability to delete orphans and unneeded packages

12. As a user, I would like to have the ability to compile from source from packages if needed.
13. As a user, I would like to have the ability to choose between a stable version, or a current bleeding-edge version package for installation.
14. As a user, I would like to be able to automate package management using xpac.
15. As a user, I would like to have the ability to use xpac to manage packages on different Unix based operating systems.

Non-Functional Requirements

1. As a user, I would like xpac to be free and open source in nature so that it is transparent and easily accessible for everyone to view and contribute.
2. As a user, I would like to have the ability to access documentation to get help.
3. As a user, I would like to have the ability to gain help on the software through an IRC channel.
4. As a user, I would like to have the ability to connect with the community of contributors and other users.
5. As a user, I would like to have the ability to install packages from a stable repository.
6. As a user, I would like to have the ability to gain access to helpful man pages to be used offline.
7. As a user, I would like to have xpac be a stable and reliable piece of software.
8. As a user, I would like to have xpac to be easy to use.
9. As a user, I would like to have xpac be hosted on a reliable server, and should be deployed in a way that it is easily accessible to everyone.
10. As a user, I would like to have a measure of security while connecting to the server.