



A Deep Dive into the Package Visualizer Application for Salesforce ISV Partners

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ABSTRACT

The Package Visualizer App is a cutting edge tool designed for Salesforce ISVs (Independent Software Vendor partners). It offers a solution for efficiently handling Second generation Packages (2GP). As the Salesforce platform evolves ISVs face challenges in organizing and presenting package information like subscriber details and release schedules effectively – for roles outside of development such, as Product Managers and Business Development Managers. The Package Visualizer aims to bridge this gap by providing a user easy to use interface built on Salesforce Lightning Web Components. It streamlines package management without the need for command line tools. This piece explores the features of the Package Visualizer including its design and integration with Salesforce APIs as well as how it enhances DevOps processes, for Independent Software Vendors (ISVs). By combining the Package Visualizer with Salesforces License Management Application (known as LMA) well as AppAnalytics features together ISVs can confidently make informed choices to efficiently handle licenses and ensure customer satisfaction.

Keywords: Package Visualizer App, Independent Software Vendors (ISVs), License Management Application (LMA)

INTRODUCTION

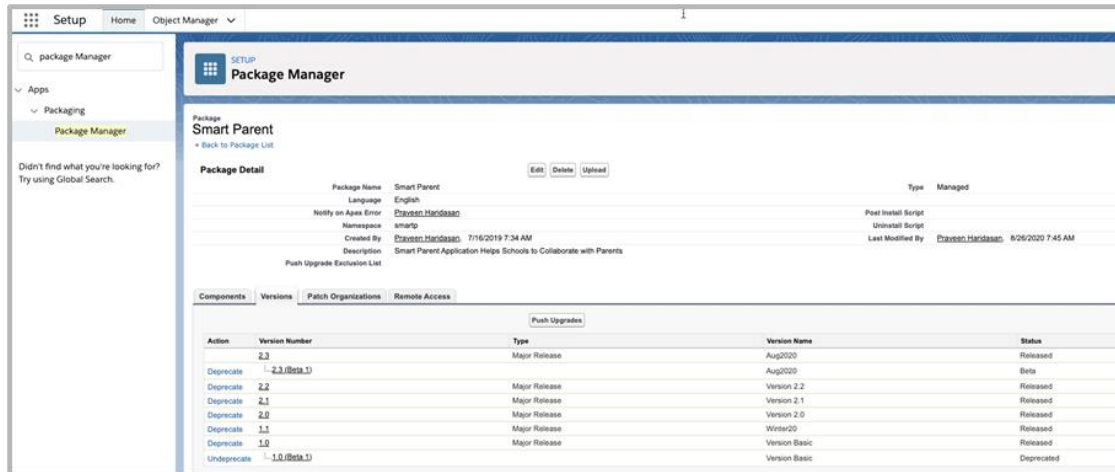
Independent Software Vendors (ISVs) have been using the Salesforce 1 platform to build their Enterprise Applications since 2005 and package ISV applications with First-Generation packages. The Salesforce platform has evolved significantly since then. Salesforce introduced Second-Generation Packaging 2018 and other key technology enhancements, like Salesforce DX (Developer Experience), Scratch org, etc., to provide a modern development experience for app developers.

Salesforce DX, CLI, and Second-Generation packaging, so-called modern development tools, primarily focus on enhancing developer experience. However, other personas in an ISV organization need access to packages, subscriber details, etc., to manage subscriber licenses and release cycles or verify package details. Some of the examples for those personas are ISV Product Managers, ISV Business Development Managers, etc. These personas may have different technical knowledge than developers and need help using modern development tools.

Having a full grasp of the problem addressed by Package Visualizer is crucial before getting into the architecture and functionality of the application. Prior to proceeding, it is imperative to comprehend the fundamental distinctions between Salesforce's First-Generation packaging and Second-Generation packaging.

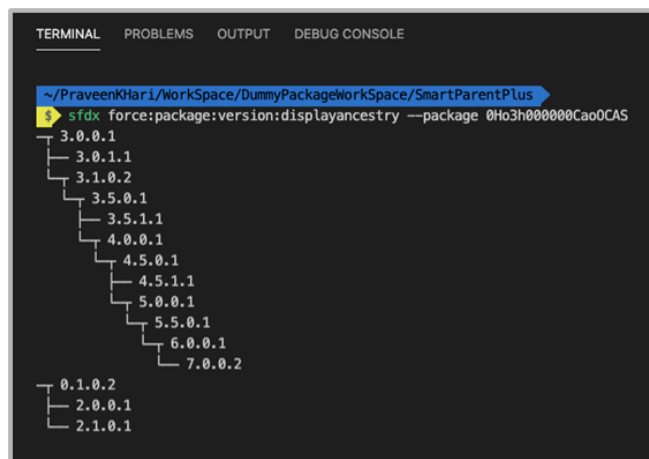
FIRST-GENERATION (1GP) VS SECOND-GENERATION (2GP)

Salesforce 1GP is based on developer org, and the source of truth for the packaged metadata is the developer org that ISV is using for packaging. We use the Package Manager from the developer org setup to complete the namespace registration, developer package, and package version. The Package Manager provides a UI-based approach for Product Managers or lead architects to manage their packages.



Screenshot One

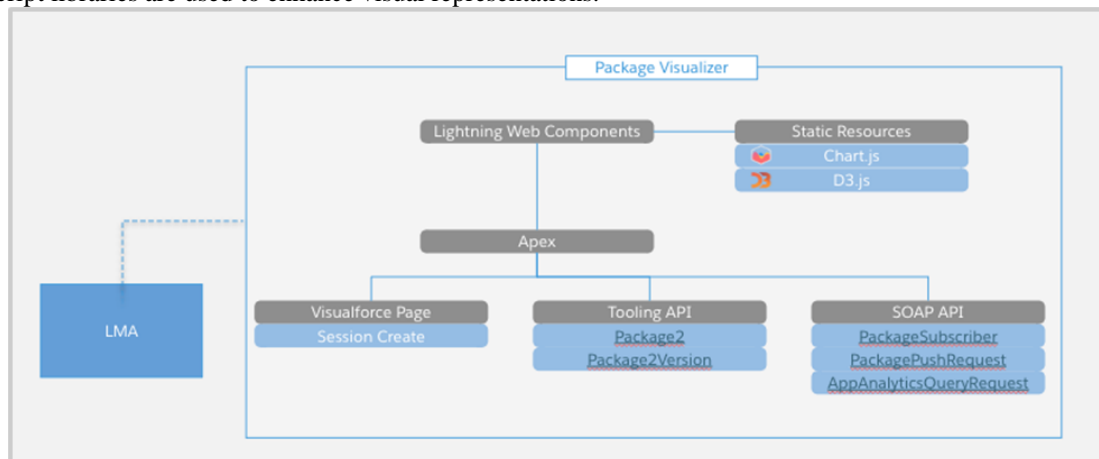
In Second-Generation packaging, also known as 2GP. Developers develop their applications using scratch org, and the package gets created in the Developer Hub. The source of truth for the packaged metadata is the source control system the ISV is using. To view or manage these packages, the PM or lead architects must install Salesforce CLI in their system and run CLI commands. In screenshot two, review the sample command a PM uses to view package details in their CLI.



Screenshot Two

APPLICATION ARCHITECTURE

The Package Visualizer is a 2GP-managed package. All the UI components are developed using Salesforce Lightning Web Components and following Salesforce Ui design guidelines throughout the application. External Javascript libraries are used to enhance visual representations.



Application Architecture Diagram

Two core Salesforce APIs retrieve package and subscriber information from the Developer Hub org: a tooling API for retrieving Package and Package Version details and a SOAP API for retrieving subscriber details and scheduling push upgrades.

In Salesforce, the Lightning Web Components session can not be used to make API calls into the same org. Hence, a Visualforce page is used to create the Visualforce page session, and this session ID is used while making API calls to the org. So, the package visualizer must be installed only on the ISV Developer Hub org.

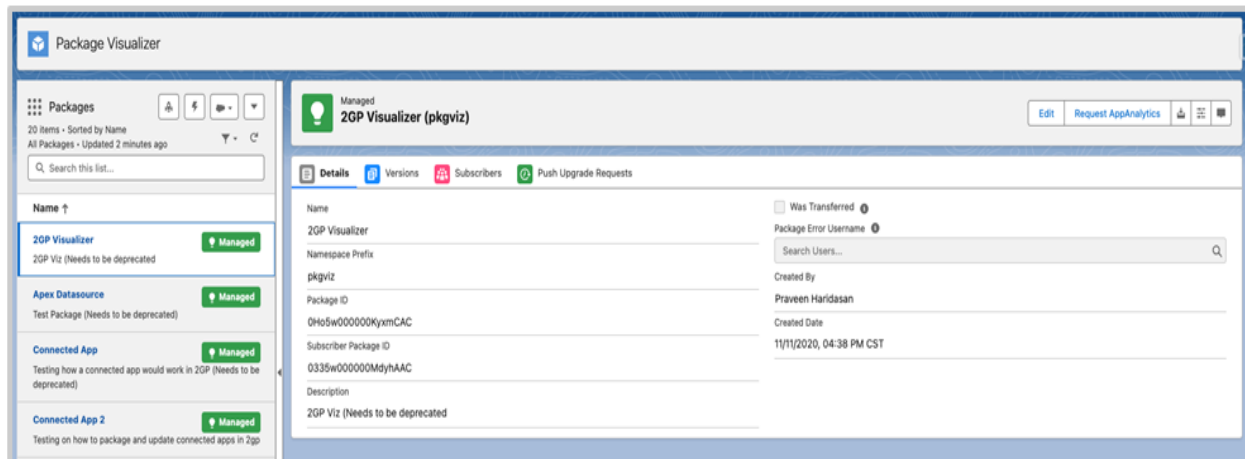
PACKAGE VISUALIZER FEATURES

So now, let us look into the value the Package Visualizer application adds to an ISV organization's DevOps process, as I mentioned in the difference between 1GP and 2GP. 2GP does not have a UI for managing the package and subscriber. It is difficult for PM and other marketing and business users to configure and use the right CLI commands to do some activities. At the same time, Salesforce is known for its low code and no code tools. So, providing a UI-based app for these users to manage their 2GP packages is essential.

Package Visualizer is a single-page application. ISV Partners will be able to visualize packages created in their Developer Hub. In the package section, partners can search and filter packages, and once they select a package, they can navigate to that specific package details section, its version, or the subscriber tab. Package Versions show all package versions associated with the chosen package. The partner can also see the package version's ancestry details if the package is managed and has a hierarchy. The Subscriber tab provides all the subscriber details of that package or package version.

Package Details

Package Visualiser displays all 2GP packages created in that Developer Hub. It includes both managed and unlocked 2GP packages. The advanced filter on Namespace and free-form text search help users find their package. The Package Details tab on the left will display package-specific details like Name, Namespace prefix, Package ID, Subscriber Package ID, etc.



Package Details Screenshot

Package Versions

The Version tab in the Package Visualizer provides a comprehensive view of all versions associated with a selected package. For 2GP Managed Packages, ISVs can visualize the version ancestry through an interactive tree chart. This feature is handy for understanding the evolution of a package over time.

Subscriber Insights

The Subscribers tab displays a list of organizations that have implemented a particular version of the package. Independent Software Vendors (ISVs) have the ability to retrieve comprehensive subscriber information, including installation status, using a user-friendly interface. The integration of AppAnalytics enhances this functionality by enabling Independent Software Vendors (ISVs) to request and analyze subscriber data for more profound insights.

License Management Application Integration

Through an integration with Salesforce's License Management Application (LMA) the Package Visualizer offers Independent Software Vendors (ISVs) the ability to efficiently oversee licenses for their packages directly within the application itself. With features like enabling license modifications visualizing activity timelines and facilitating push upgrades this interface provides ISVs with autonomy, in managing their software portfolios effectively.

AppAnalytics

A crucial aspect of the Package Visualizer is the integration of AppAnalytics, which enables Independent Software Vendors (ISVs) to request and examine comprehensive usage logs and subscriber snapshots. This data-driven

strategy enables Independent Software Vendors (ISVs) to make well-informed decisions on package upgrades, feature releases, and customer support.

Scheduling Push Upgrades

The push upgrade functionality enables Independent Software Vendors (ISVs) to organize and manage updates for their customers ensuring that all users receive the version of the software package. Along with tools for scheduling and monitoring upgrade requests the Package Visualizer provides a user interface, for managing these updates.

CONCLUSION

Designed to provide a clear and intuitive interface for handling packages, assessing version history, and tracking subscriber statistics, the Package Visualizer Application is an essential tool for Salesforce ISV partners. Designed to seamlessly integrate with key Salesforce applications like LMA and AppAnalytics, the Package Visualizer empowers Independent Software Vendors (ISVs) to make well-informed decisions using data and significantly improve their software offerings. As the Salesforce ecosystem continues to develop, tools like the Package Visualizer will be crucial in helping Independent Software Vendors (ISVs) efficiently manage and distribute packages.

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