# Gears Product Line Engineering Lifecycle Framework™

## Enterprise Gears Product Overview

*Feature-based Product Line Engineering (PLE) with Gears is a proven, scalable approach that enables organizations to develop, deliver, maintain, and evolve an entire product line portfolio through each stage of the lifecycle, and across the enterprise. This leading-edge approach allows you to leverage order-of-magnitude improvements in time-to-market, development cost, portfolio scalability, and product quality for your competitive advantage.*

BigLever Software's Gears Product Line Engineering Lifecycle Framework allows you to engineer your entire product line portfolio as a single production system rather than a multitude of products. This capability allows you to establish a Feature-based PLE Factory — a single system capable of automatically producing all of the products in your product line, based on the features selected for each product variant.

A PLE Factory is much like a typical manufacturing factory except that it operates on digital assets rather than physical parts. BigLever's Gears is the technology foundation for your PLE Factory.

The Gears PLE Lifecycle Framework includes the Gears tool and product configurator, as well as a set of integration solutions that support seamless PLE across the lifecycle – from requirements to design, implementation, testing, delivery, maintenance, and evolution. These integrations utilize Gears concepts and constructs to extend third party tools and ensure consistent PLE capabilities directly from the Framework.

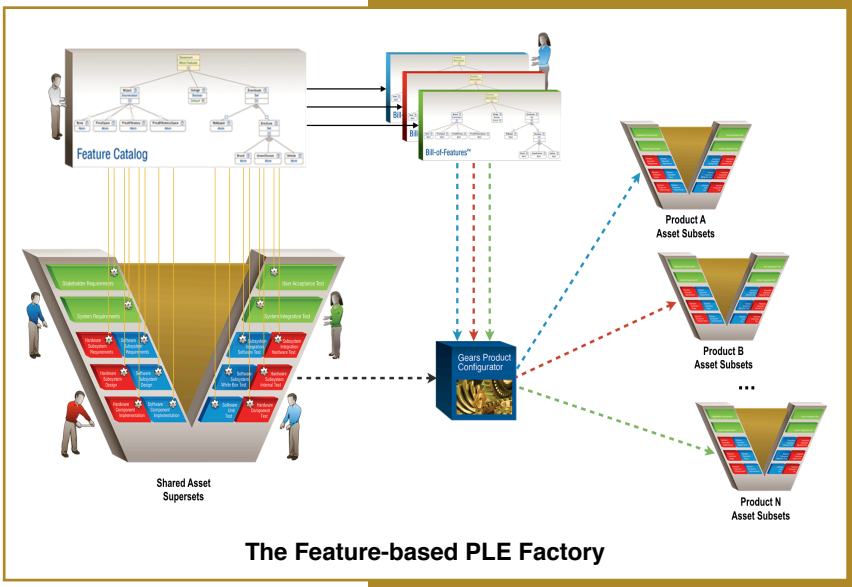
**Desktop Gears** provides an all-in-one development environment for establishing, managing, and operating your Feature-based PLE Factory. It includes a powerful collection of editors, constraint managers, wizards, analytical tools, and a product configurator that automatically assembles and configures shared digital assets, guided by product feature profiles, to produce the products in your portfolio.

**Enterprise Gears** allows both technical and non-technical users across your enterprise to inspect existing production lines from a browser, with nothing to install. It provides interactive graphical diagrams for feature models and feature profiles, an easy and accessible user interface, and an API to access PLE models to support custom extensions and integrations.

## Gears and the PLE Factory

BigLever's Gears PLE Lifecycle Framework provides the industrial-strength automation that powers *Feature-based PLE*, the state-of-the-art form of PLE that is in use by leading companies across a spectrum of industry sectors.

Feature-based PLE employs the concept of a *factory*. Under this approach, shared assets are the digital artifacts you use to design, develop, build, deploy, and evolve the products in your product line. These shared assets are created and maintained as supersets with variation points, meaning that they contain any content needed to support any product in the product line.




**The Feature-based PLE Factory**

Gears produces product-specific instances by configuring the shared asset supersets according to the feature choices for that product.

The collection of feature choices for a product is called a Bill-of-Features — and is drawn from the product line's Feature Catalog, which contains all of the available feature choices for the product line.

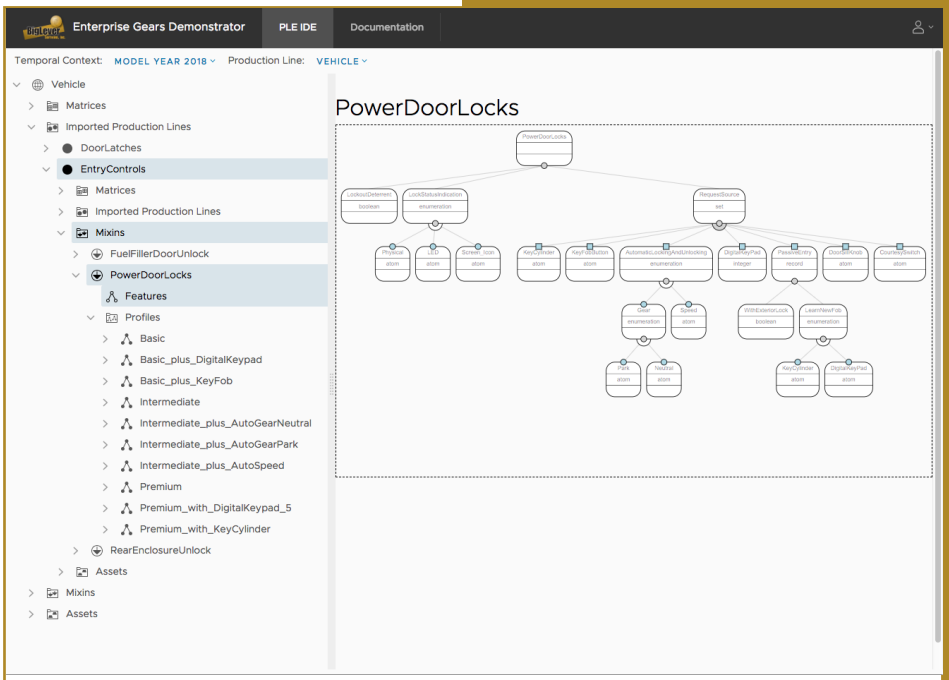
## Enterprise Gears Features

**Enterprise Gears Production Line Browser:** Enterprise Gears provides an easy, accessible interface to your production line models. Browse the features available and features selected across your entire product line portfolio directly from a web browser with no application to install.

- *Production line hierarchy*: View the decomposition of your production line system as a system of systems.
- *Product family trees*: Review the iterative, multistage configuration captured as product family trees.
- *Feature models and feature profiles*: Explore the features offered by the production line, how they are decomposed, and how they are allocated to products.
- *Semantic check*: Review the accuracy of products via semantic check of products and matrices.
- *Web interface*: Use the same visual representations as Desktop Gears to ease collaboration among your stakeholders.

**Enterprise Gears API:** Enterprise Gears provides an approachable and intuitive API for extending and integrating PLE into tools and processes beyond traditional engineering domains.

- Programmatic access to production line models using industry standard technology and techniques
- OpenAPI-based specification supporting API client generation in more than 40 programming languages
- Single Sign-on Integration via OpenID Connect




**Enterprise Gears Production Line Browser**

**Enterprise Gears Models:** Enterprise Gears uses the same production line models created and maintained by Desktop Gears. Models are made available to Enterprise Gears by your version control system.

**Installation Requirements:**

- *Server*: Tomcat 8.5 with Java 1.8 on Windows or Linux
- *Browser*: Chrome
- *Single Sign On*: OpenID Connect
- *Database*: No database required
- *Version control*: Any version control system supporting plain-text files

## Features at a Glance

- Inspect existing production lines from a web browser, with nothing to install
- Interactive graphical diagrams for feature models and feature profiles
- Easy and accessible user interface
- API for access to PLE models supporting custom extensions and integrations
- Support for hierarchical production lines and product family trees

## Access Modes

- Web browser based interface for viewing production line models
- OpenAPI-based API providing programmatic access to production line models, for custom integration and extension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