



# Drone Deploy Kit

(by DT Guardrails)



April 16, 2018

Confidential. Not to be copied, distributed, or reproduced without prior approval.

# The Problem....

---

- New Developers don't know where to start.
- Documentation is quickly outdated & irrelevant.
- Every team has their own version of a “starter kit.”
- Most starter kits are loaded with unnecessary “bloat.”
- Standards are based on the needs of the creator – not on the needs of GE as a whole.
- Guardrails (i.e. Perf. Monitoring) are often an after-thought.

***Guardrails Core Team to the Rescue!***



## But Wait, There's More....

---

- It's Not Just About Creating New Projects
- We Can Make It Easier to Propagate Standards (view engines, gulp, sass, webpack, babel, linters, browser-sync, wct and MUCH more!)
- We Can Automate Mundane Tasks to Accelerate Guardrails Implementation

***Guardrails Core Team to the Rescue!***



---

Confidential. Not to be copied, distributed, or reproduced without prior approval.

April 16, 2018

# The Problem... (aka User Stories)

“As a Software Developer or Engineer...”



... I need a blank "Hello World" Micro-App ...



... I need the Sample Polymer Micro-App ...



... I need a simple API (with Swagger documentation) ...



... I need to install the Guardrails (CICADA, New Relic, Google Analytics, etc.) ...



... I need to fix my proxy issues ...



... I need to setup my workstation for Development ...



... I need to start a new Product (px Sample App, API, Guardrails) ...

“... so that I can be more **Productive** and focus on my Product.”



# The Solution... Drone Deploy Kit



|                               | <b>Drone Deploy Kit<br/>(UI &amp; CLI)</b>  | <b>Beekeeper Service<br/>(RESTful API)</b>  | <b>Worker Bees</b>   |
|-------------------------------|---|---|--|
| <b>Primary Responsibility</b> | Provide user-friendly interface to select/execute automation options.   | Translation service between User and Worker Bees.                                     | Execute commands to install/configure tech stack locally.                              |
| <b>Requirements</b>           | Predix-based application with px-Components.  | Register options & requirements. Save config for repeat execution (private & public). | Yeoman generator packages built under consistent standards. Auto-update functionality. |
| <b>Assumptions</b>            | <p>All solutions adhere to the Guardrail standards.<br/>Platform independent (Windows &amp; Mac).<br/>Supports common &amp; evolving technology stacks (Predix Buildpacks, Predix &amp; AWS).</p> |   |  |



# High-Level Architecture



| End User | Drone Deploy Kit UI                                  | Beekeeper Service  | Worker Bees (WB) |  |
|----------|--|--|------------------|--|
|          |  | * Preliminary: Any New WB is registered with Beekeeper Service                       |                  |  |
| 1        | User Authenticates to the UI with SSO via Shared-UAA |  |                  |  |
|          | 2  | DDK UI gets list of all available WBs & Bundles (public & private)                   |                  |  |
|          | 3  | User selects desired WBs or Bundles  |                  |  |
|          | 4  | Beekeeper Service provides list of required config. options                          |                  |  |
|          | 5  | User provides required config. inputs  |                  |  |
|          | 6  | Beekeeper Service translates requirements into WB execution commands (with inputs)   |                  |  |
|          | 7  | User executes provided command string(s) within Terminal/Shell & WBs are run locally |                  |  |



# Worker Bee Bundles (Examples)

A **Bundle** is a collection standard “Worker Bee” packages applicable for specific use cases. They can be shared Publicly – or reused privately.



# Demo



# Create Your Own “Worker Bee” Generator



DT Guardrails will provide a skeleton Worker Bee Generator with basic structure... Just add your functionality!

## Requirements:

- Will roll up as a “sub-generator” under the DDK
- Clearly documented inputs and expected outputs
- Will register inputs/outputs with the Beekeeper Service
- Open to Global / Horizontal Consumption (GE4GE)
- Open to Community Contribution





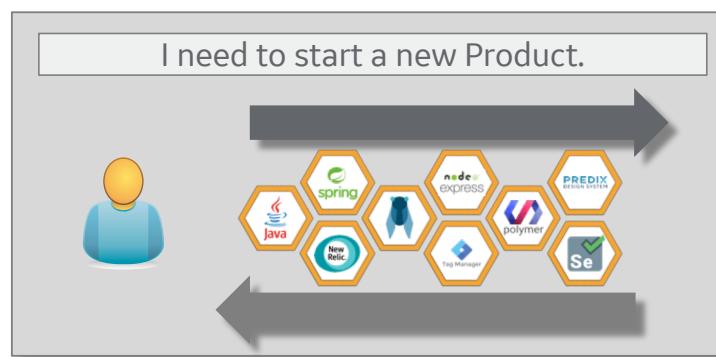
# Backup



---

Confidential. Not to be copied, distributed, or reproduced without prior approval.

# The Solution... In Action



Beekeeper  
Service



# Drone Deploy Kit (Master) Generator



- Will Manage Auto Update Functionality for All Generators
- Will Process Inputs via Command Line, Config File, or CLI Prompts
- Will Handle Incoming Params for all Sub-Generators “Worker Bees”
- Will Report Usage Metrics and Error Logs back to Beekeeper Service



# “Worker Bee” Sub-Generators



## What Should “Bee” In A Generator?

- Scaffold a Project
- Create Platform Services for Consumption (i.e. Predix / AWS)
- Set Configuration Options to Enable Services (Shared-UAA)
- Configure Workstation Settings (i.e. Proxies) or Setup Development Tools (i.e. IDE)
- Audit Collection Tools (i.e. Guardrail Metrics)
- Anything you can turn into Code...

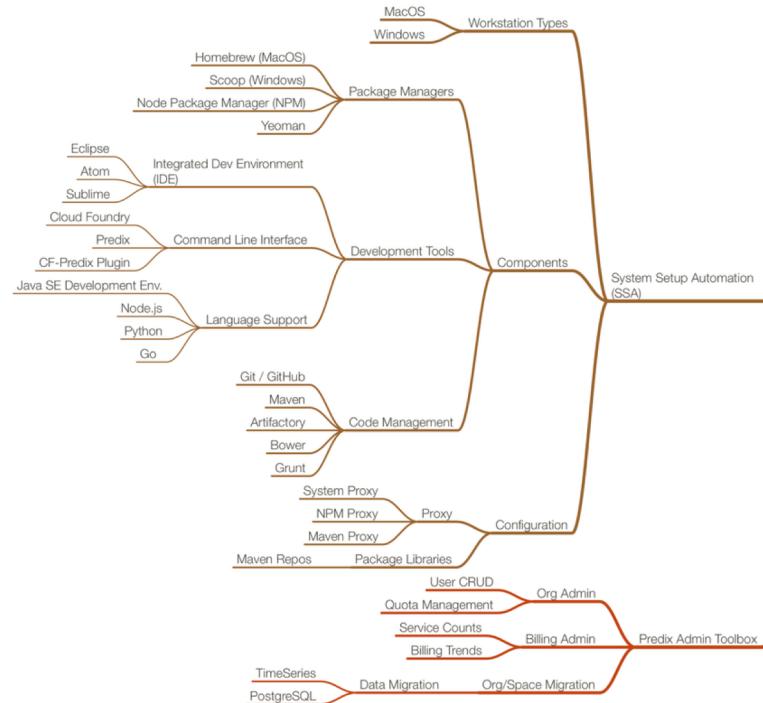
## What Should NOT “Bee” In A Generator?

- Anything Destructive...

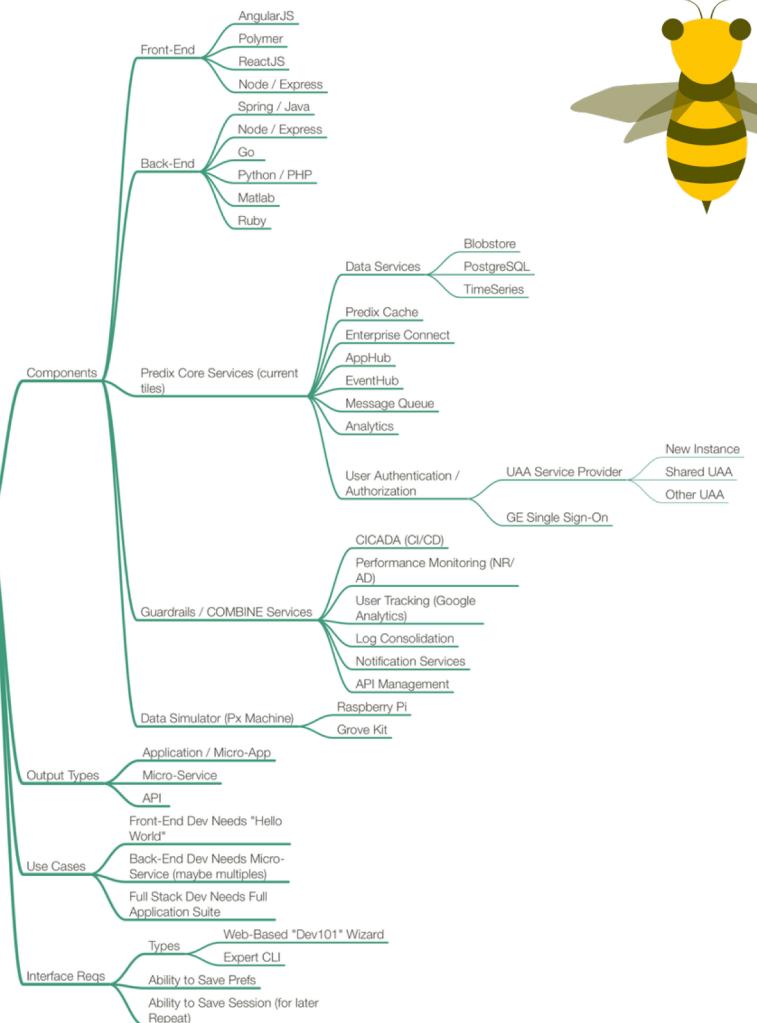
*Otherwise, there are no restrictions.  
Everything is Fair Game!*



# Drone Deploy Kit Vision



Source: <https://ge.box.com/v/ddk-mindmap>



# What Next?

- Start simple and grow quickly
- Market, market, market!
- Solicit help building “Worker Bees” from the Experts
- Several generators already exist, bring them in
- Collect data on which packages are being used, how often, and by whom
- Continue Guardrails hackathons in the Hubs (i.e. one per site per quarter)



# Example of "the Bloat"

## **px-Sample-app**

---

- Loads everything in Predix Design System
- Includes Asset, Timeseries, charts, graphs, etc.
- ~450MB of contents -> 54MB droplet
- Default of 1GB memory / 1GB disk for 'cf push'

## **express-generator**

---

- Loads just enough to start an app (hello world)
- No extra libraries or components
- ~8MB of contents -> 11MB droplet

