Big Bang Overview

PLATFORM ONE

BIG BANG

What does Big Bang provide?

- A Framework for deploying instances of a DevSecOps Platform for DoD commands who need to build and run mission applications.

  The Big Bang Platform can receive a cATO (continuous Authority to Operate) by working with an AO (Authorizing Official), because it's DSOP (DevSecOps Platform) reference architecture compliant and leverages Iron Bank Container Images which are created as a result of using a CICD Pipeline and Secure Software Development Practices.

What is Big Bang?

Big Bang is a Framework for deploying instances of a DevSecOps Platform

Big Bang is:

- An Umbrella Helm Chart that leverages Iron Bank Container Images
- Installed on a pre-existing Kubernetes Cluster
- It's installed and managed using GitOps and Infrastructure as Code
  - Big Bang Core is installed using Flux(v2)
  - Addons can be installed using Flux or ArgoCD.
- An instance of Big Bang is a DevSecOps Platform that can build and host apps
- Open Source Software.

Bring your own Cluster:

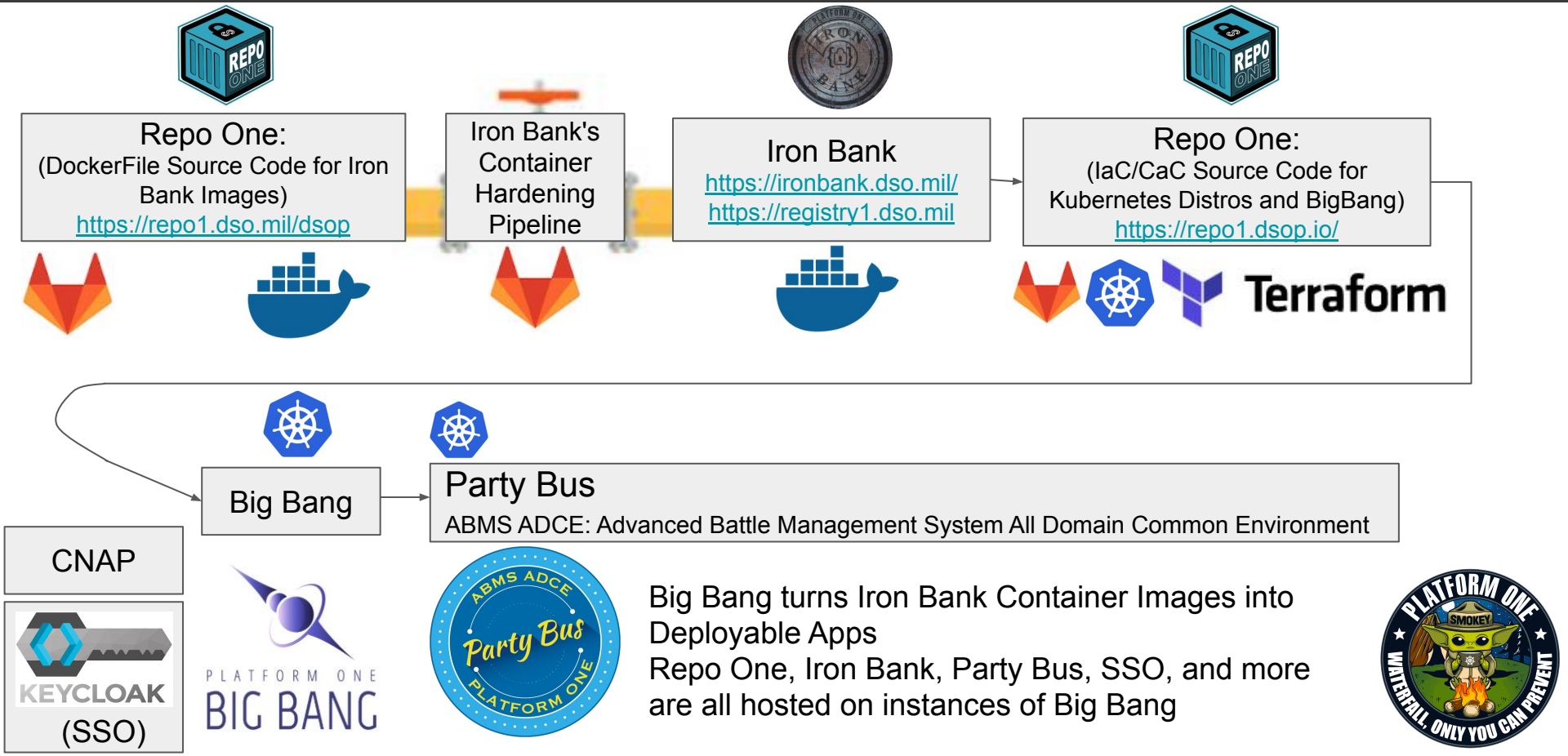
Big Bang is installed on a pre-existing Kubernetes Cluster:

- We have docs to help customers make an informed decision: https://confluence.il2.dso.mil/display/BB1/KubeDistro+Decision+Generic+Customer+ADR

- P1 hosts Infrastructure as Code for Kubernetes Clusters: https://repo1.dso.mil/platform-one/distros

- P1's Customer Success Team can connect customers with vendors and staff augmentation who can help with this prerequisite.

How the P1 Services Fit Together



Big Bang, Party Bus, and ATO Layers

A big difference between Big Bang and Party Bus is that using Party Bus means you're using PartyBus's CICD pipelines and processes so apps can get a CTF (Certificate to Field) and leverage Party Bus's cATO, which inherit Platform One's ATOs of the underlying infrastructure, which P1's AO (Authorizing Official) has approved.

Installing Big Bang does not mean that you automagically get a cATO or ATO. Consumers of Big Bang need to work with their AOs to get an ATO/cATO. Big Bang Customers are able to get support from Platform One's security team to help with this.

Each Layer of Infrastructure needs a cATO / ATO that's approved by an AO

Applications that run on top of Big Bang / Party Bus go through a CICD pipeline and follow secure software development processes approved by an AO to get a CTF.
cATO: any app with a CTF is blessed to run in production

Kubernetes Distribution (ByoC) needs an ATO

RHEL 7/8 OS and Hosting Environment (AWS, Azure, VMware) needs an ATO

Visualization of Big Bang

Customer A's Clusters

Internet Connected Environment
Highest Automation and BB Support
IaC/CaC hosted on Repo1

Dev

Mock Air Gapped Environment
High Automation and BB Support
IaC/CaC hosted on Repo1

Stage

Air Gapped Environment
Semi Automation, less* BB Support
IaC/CaC hosted in Customer's Env

Prod

Customer B's Clusters

Mission App 1 (Prod)

Mission App 2 (Prod)

Customer C's Clusters

Dev / CICD Software Factory

Stage

Prod (multiple mission apps)

What applications are in a BigBang Cluster?

https://repo1.dso.mil/platform-one/big-bang/apps

P

Packages

Group ID: 4366

Collection of kubernetes applications bundled as Kpt packages

Subgroups and projects Shared projects Archived projects

Search by name

- S **Sandbox**
  Packages which are not (yet) supported by Big Bang
- A **Application Utilities**
  Applications that provide utility for other applications to consume (PostgreSQL, MinIO, etc...)
- S **Security Tools**
- D **Developer Tools**
- C **Collaboration Tools**
- C **Core**
  Core DSOP Reference Architecture applications

How do I get started? Where can I find out more?

BigBang's being Open Sourced:
https://repo1.dso.mil/platform-one/big-bang/apps
https://repo1.dso.mil/platform-one/big-bang/umbrella

Licensing Info can be found on Confluence:
https://confluence.il2.dso.mil/display/BB1/Licensing+information

P1's BigBang Onboarding Webpage:
https://p1.dso.mil/#/products/big-bang/onboarding
- Jira Service Desk flow allows signing up for Workshop or Residency
- Confluence FAQS
- Both Jira and Confluence access require creating an account (account creation is self service but requires a .mil or a validated email domain)