



AccionBreeze

Event Driven Architecture & Framework



Breeze Value Proposition

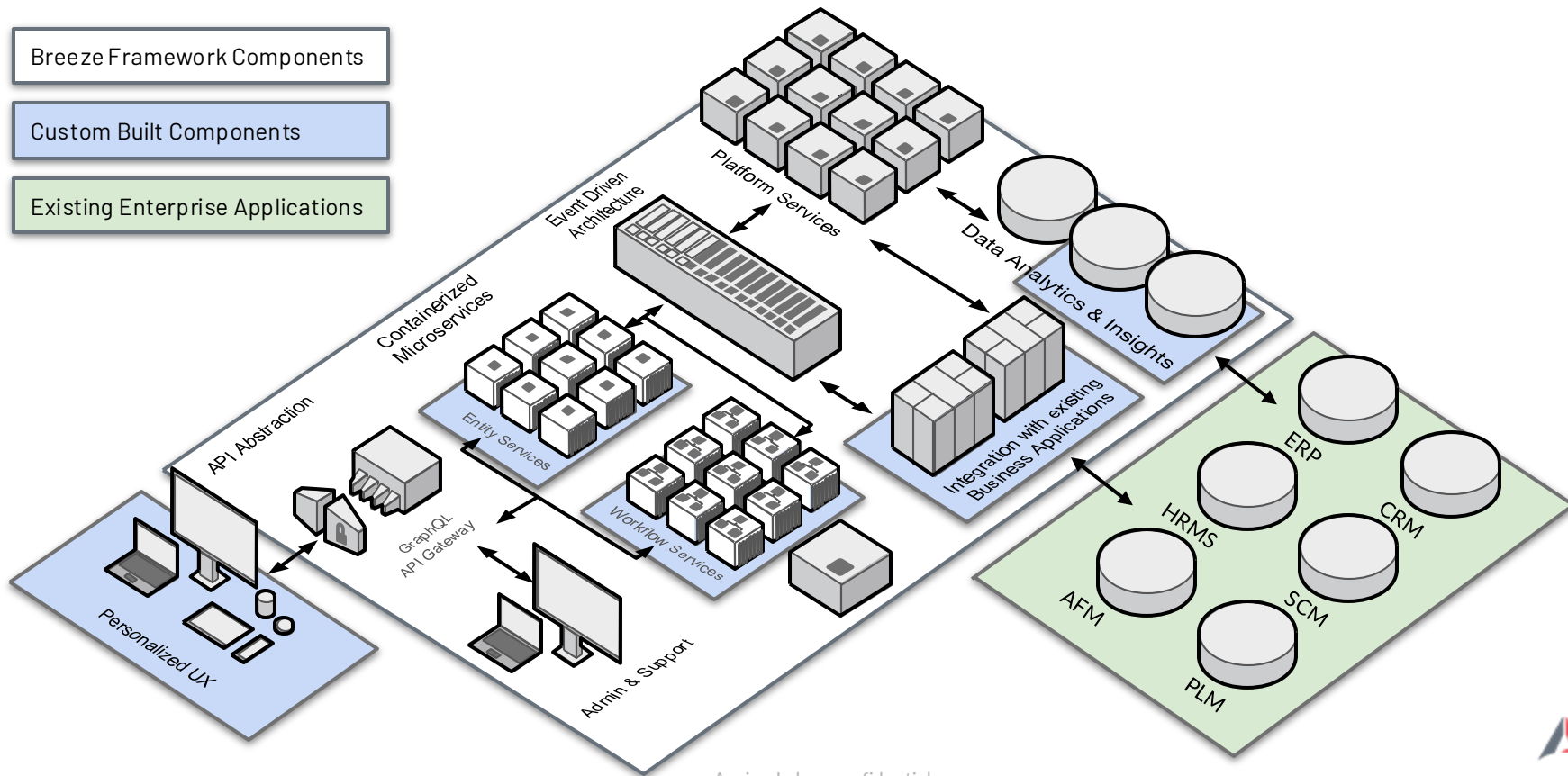
A Comprehensive Digital Application Development Framework

- **Digital User Experiences**
 - Conversational Interfaces that allow applications to talk to the user
 - Multi-device user experience allows users to access features on any device
 - Highly Personalized applications using AI and Machine Learning
 - User Defined UI Components - Forms Engine, Reports Engine, Templates Engine
- **Build For Change**
 - Applications need to be built fast and change fast - no more quarterly releases!
 - API Engine - Create Entity Microservices that implement business objects
 - Workflow Engine - Define Workflows that orchestrate multiple Entity Microservices and User Actions
- **Event Driven, Microservices Architecture**
 - Loosely coupled components that implement front end apps and business domains in microservices
 - Integration between components uses events, thus allowing fast changes
- **Minimize Technical Debt**
 - Pre-built abstractions and components significantly cut down on technical debt while adding new features to the application
 - Architecture that embraces change and scalability helps incorporate more features without accumulating new technical debt
- **High Performance**
 - An architecture with loosely coupled components allows it to scale indefinitely
 - Automated deployment of all components using DevOps on Cloud Infrastructure
 - Supports all public cloud platforms (AWS, Azure, GCP) as well as On Premise installations







Breeze Architecture Blueprint

Best Practices integrated into a seamless automated framework






Breeze Reusable Components

Development Accelerators		
API Engine	UI based Entity Microservice Generator of REST APIs and GraphQL APIs.	
Forms Engine	User defined forms and data collection integrated with Conversational UI.	
Templates Engine	Used to generate standardized reports, documents, emails, etc.	
Grids Engine	Powerful grids with optimized data integration, grouping, filters and the works.	



Breeze Reusable Components

Platform Components		
Identity and Access Management Service	For securely initiating, storing and managing user identities and access permissions	Keycloak
Alerts & Notifications Service	A notification engine that sends notifications like Push, SMS, email, etc. to any device.	
Zephyr - Conversational Interface Service	Computer program/AI entity that can be integrated with messaging platforms, websites, etc.	
Workflow Service	Provides choreography of business workflows used largely by Workflow Microservices	Camunda / Zeebe
Full Text Search Service	Advanced search capabilities like fuzzy search, highlights, autocomplete, etc.	ElasticSearch
Headless Content Management Service	Back-end only content management system that makes content accessible via a RESTful API for display on any device.	Strapi / Liferay
Application Integration Service	API driven integration with third party platforms such as Billing, CRM, Marketing, Analytics and AI/ML.	Apache Camel
Alizeh - Recommendation Service	AI/ML based recommendations by monitoring user activity provides intelligent personalization.	



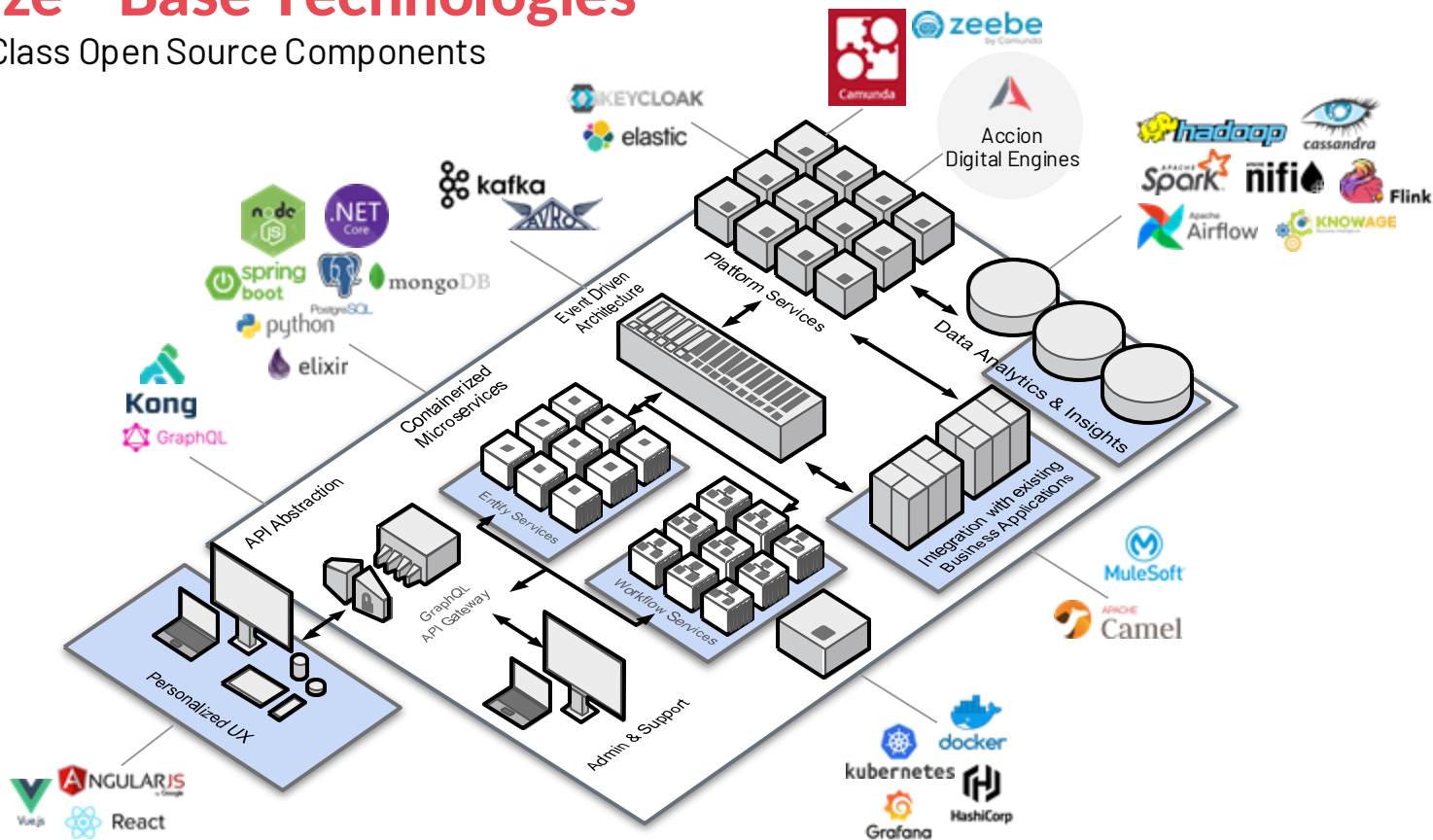
Breeze Reusable Components

Framework Components		
API Abstraction	Guidelines for incorporating GraphQL along with standard REST APIs without any significant additional development, making front end development extremely flexible and agnostic of changes to REST APIs.	GraphQL
Events Queue	Framework for a microservices architecture that uses events for synchronization and cross service integration so as to deliver high scalability and performance.	Apache Kafka
Raw Data Store	Component to capture and store raw significant business events that can be used for reporting and semantic analysis.	Hadoop
DevOps and CI/CD Automation		
Containerized Deployment Engine	Containerized deployment engine for microservices using Docker containers and Kubernetes.	Docker, Kubernetes
Continuous Integration and Deployment Engine	Completely automated deployment platform for microservices.	Jenkins



Breeze - Base Technologies

Best In Class Open Source Components



Accion Digital Engines

Accion's Contributions to the Breeze Platform Services

- **Zephyr - Conversational Interface Platform**
 - Conversational Widgets
 - Automation Agents
 - CRUD and Search Commands
- **Alizeh - Personalization Engine**
 - Capture and track business events
 - Learning model to build user profile
 - Recommendation engine
- **Notifications Engine**
 - Event based response engine
 - Integrated Email, Push, SMS and Mobile
 - Plugin architecture to add new channels
- **API Engine**
 - UI based Entity Microservice Generator
 - Automatic REST APIs and GraphQL APIs
 - Integration hooks for events and APIs
- **Forms Engine**
 - Powerful forms engine with wide range of components
 - Custom component architecture
 - Code generated for Angular & React
- **Grids Engine**
 - Configurable grids with pagination, grouping, filtering and search
 - Configurable Data APIs
 - Data Visualization Widgets
 - PDF and Spreadsheet Import/Export
- **Template Engine**
 - Support for a wide range of template languages
 - Categorization and tagging of templates
 - PDF Export



Development, Integration and Deployment Technologies

Breeze Continuous Integration and Deployment Platforms

Source Repositories	Continuous Integration Server	Automated Testing	Artifact Repositories	Ops Console and Resource Model	Infrastructure Platforms
GitHub	Jenkins	REST-assured POSTMAN	artifactory	CHEF Ansible	amazon web services
git	Gradle	Protractor Webdriverio	Sonatype Nexus	App Engine CloudBees	Microsoft Azure
maven		Loadrunner Burpsuite Extensions sonarqube		HEROKU puppet labs	Google Cloud Linux
		Perfaccion		Terraform	



Breeze Platform Capabilities & Tech Stack

Containerized Infrastructure

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	Commission public, private and hybrid cloud based infrastructure using automated script	JSON configuration from the user which will be the input for the automated script	Developed inhouse scripts	Terraform	Public Cloud	AWS	Done
					Private Cloud	on-prem	ToDo
					Hybrid Cloud	AWS, Azure, GCP	ToDo
2	Automated Node Recovery	No Input	Developed user data (Kubernetes packages installation and file system mounting) automation for EKS node configuration	Auto Scaling Group (ASG)	Kubernetes	AWS	Done
3	Configure different domain per namespace	YAML Configuration	Automated the setup of different domains for different namespaces within same cluster using the Application Load Balancer (ALB)	Application Load Balancer (ALB)	Kubernetes, KONG	AWS	Done
4	Automated setup of Jenkins	No Input	Developed inhouse scripts	Terraform, Ansible	Jenkins	AWS, on-prem	Done
5	Automated Setup of Managed Services	No Input	Develop inhouse scripts	Terraform	RDS PostgresSQL	AWS	ToDo
					RDS DocumentDB		
					MSK		
					EFS		

Breeze Platform Capabilities & Tech Stack

Identity & Access Management

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	Automated IAM installation	JSON Configuration	Developed inhouse scripts	Terraform	Kubernetes, Keycloak	AWS, on-prem	Done
					Auth0		ToDo
					Okta		ToDo
2	Support for multiple IAM platform under the hood		Develop plugins for multiple IAM's to be able to integrate with IAM microservice which runs on top of the IAM platform	Node.js	Keycloak		ToDo
					Auth0		Done
					Okta		ToDo
3	GraphQL support	UI or Services can directly use GraphQL queries for IAM	Enabled the graphql support by integrating GraphQL for all the IAM APIs	Node.js	GraphQL		Done
4	Events integration for CRUD operations of User, Tenant, Identity provider in IAM service	JSON Configuration	Built the inhouse plugins to be able to connect with Kafka and schema registry based on JSON configuration as an input and transmit messages which is integrated with IAM microservice	Node.js	Confluent Schema Registry, Kafka		In Progress

Breeze Platform Capabilities & Tech Stack

API Abstraction

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	IaaS automated, bundled with Breeze infra setup	No Input	Developed inhouse scripts	Terraform	Kubernetes, KONG	AWS, on-prem	Done
					Apigee		ToDo
2	Automated microservice registration during deployment	YAML Configuration	Developed inhouse scripts	Terraform	Kubernetes, KONG	AWS, on-prem	Done
					Apigee		ToDo
3	Pre-built integrations with Breeze IAM to enable authentication	YAML Configuration	Developed inhouse scripts	Terraform	Kubernetes, KONG	AWS, on-prem	Done
					Apigee		ToDo

Breeze Platform Capabilities

Event Queue

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	Ready available plugin for events integration	JSON configuration	Developed plugins using Kafka and Avro in Java and Node.js which is integrated with the Breeze platform services to be event enabled	JAVA / Node.js	Confluent Schema Registry, Kafka		Done
2	Automated setup and configuration	JSON Configuration	Developed inhouse scripts	Terraform	Kubernetes	AWS, on-prem	Done
3	Low learning curve	Normal REST APIs for push/pull of events	The inhouse plugin is a wrapper on top of Kafka and the user just needs to call the method to produce/consume events, which makes it easy for the user to enable events without having the working knowledge of Kafka				
4	Support for cloud Kafka (AWS MSK) and on-prem Kafka	JSON Configuration	The inhouse plugin is a wrapper on top of Kafka and supports both the Cloud Kafka (AWS MSK) and on-prem Kafka	JAVA / Node.js	Confluent Schema Registry, Kafka, AWS MSK		Done
5	Support for kafka backup and restoration	No Input	Providing support for kafka backups (cold backup) using kafka mirror maker v2 and kafka-backup		Confluent Kafka, Kafka Connectors (Sink and Source), Kafka Mirror maker v2		Done

Breeze Platform Capabilities

Automated CI

Sr No	Breeze Value	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	Continuous inspection of code quality using static code scanner to perform automatic analysis of code to detect bugs, code smells, and security vulnerabilities	No Input	Integrated Sonarqube plugin in the Jenkins pipeline	Sonarqube	Jenkins		Done
2	Images scanning to find vulnerabilities and to inspect images as per industry standards using Common Vulnerabilities and Exposures (CVE) tool	No Input	Integrate the scanner in Jenkins pipeline	Anchore	Jenkins		ToDo
3	API testing, integration testing, UI testing, security / penetration testing, performance testing etc	No Input	Developed Groovy scripts for execution of testing tools via Jenkins	Newman, Codecept, OWASP ZAP, Jmeter	Jenkins		ToDo
		No Input		Newman	Jenkins		Done
4	Secured secret management	No Input	Integrate HashiCorp Vault and AWS SSM in the Jenkins pipeline	HashiCorp Vault	Jenkins		Done
		No Input		AWS SSM	Jenkins		Done

Breeze Platform Capabilities

Automated CD

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	Easy release, patch and hotfix strategy and development	Define branches and tag based on the nomenclature					Done
2	Version based deployment for easy roll back and ease of integration	Login to Jenkins and select the microservice version to be deployed	Developed inhouse scripts	Jenkins	Kubernetes	AWS, on-prem	Done
3	Flexibility to deploy on any environment from any branch or tag	Login to Jenkins and select the microservice version to be deployed	Developed inhouse scripts	Jenkins	Kubernetes	AWS, on-prem	Done
4	Flexibility to build once and deploy multiple times on different environment	Login to Jenkins and select the microservice version to be deployed	Developed inhouse scripts	Jenkins	Kubernetes	AWS, on-prem	Done

Breeze Platform Capabilities

Monitoring & Control

Sr No	Breeze Platform Capability	User Input	Breeze Code	Application Technology	Middleware Technology	Cloud Technology	Status
1	IaaS automated, bundled with Breeze infra setup	No Input	Developed inhouse scripts	Terraform	Kubernetes, Grafana, Prometheus, Graylog	AWS, on-prem	Done
2	Automated log monitoring	Write log to the defined log folder	Developed inhouse scripts	Terraform	Kubernetes, Graylog	AWS, on-prem	Done

An Accelerated Road Map for Building Digital Products and Enterprise Solutions

An Accelerated Road Map for Building Digital Products and Enterprise Solutions



Breeze Roadmap

- DevOps and CI/CD automation components for Azure (currently only supports AWS)
- Data Lake and Business Analytics Platform
- Data Visualization Engine
- Full Text Search - extend data migration library for indexing content from various data sources.
- API Engine - support for Spring Boot and .Net Core microservices. Current version supports NodeJS microservices
- Rules Engine - Develop an engine to provide flexible and visual way of defining complex business rules that directly integrate with business workflows.
- Identity & Access Management Service - add support for additional IAM platforms including AWS Identity, Auth0 and Okta
- Zephyr Forms - A combination of the Conversational Interface Engine and the Forms Engine, that will allow forms to be filled by listening to voice or typed text commands
- User Defined Notifications - Add a feature to allow end users to define rules to receive personalized notifications.





Get Breeze Now!

Accion Labs develops and maintains the Breeze Framework and continuously updates and upgrades the framework

Accion Labs uses the Breeze Framework to provide product development services to customers

<http://accionlabs.com>

