

A Brandtech Company

Headquarters : **UK**



Problem statement

Developing features at Pencil was challenging due to complex LLM integrations and **dependencies** across multiple micro services. Local testing was difficult, and relying on a **shared environment made issue isolation and debugging slow**. A solution was needed to provide each feature with its own isolated environment to speed up development and testing.



feat: implement AI-powered ad variations

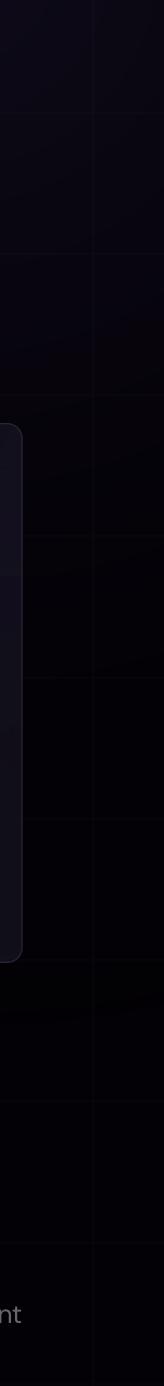
feat: introduce asset tagging for easier searching

feat: add AI-powered video ad creation

feat: add dynamic image ad creation with templates

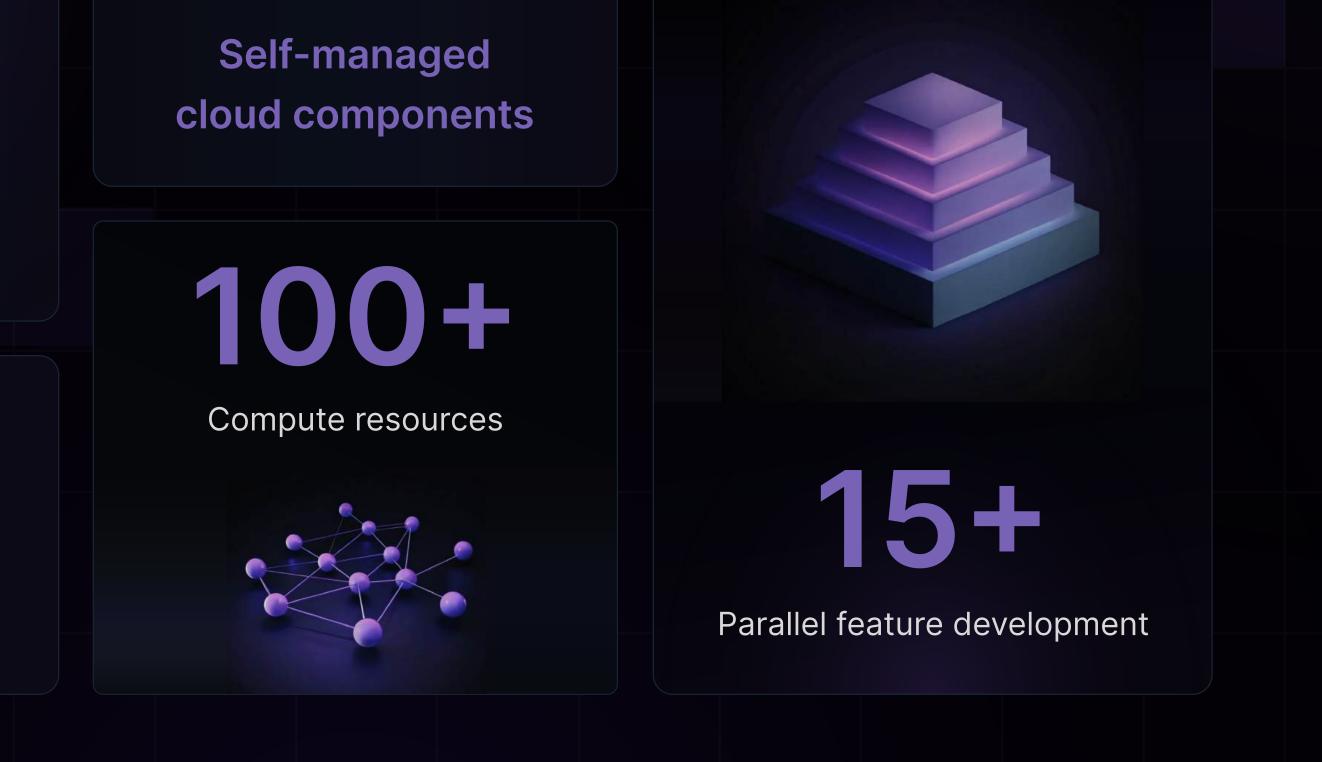
feat: introduce customizable templates for video and image ads

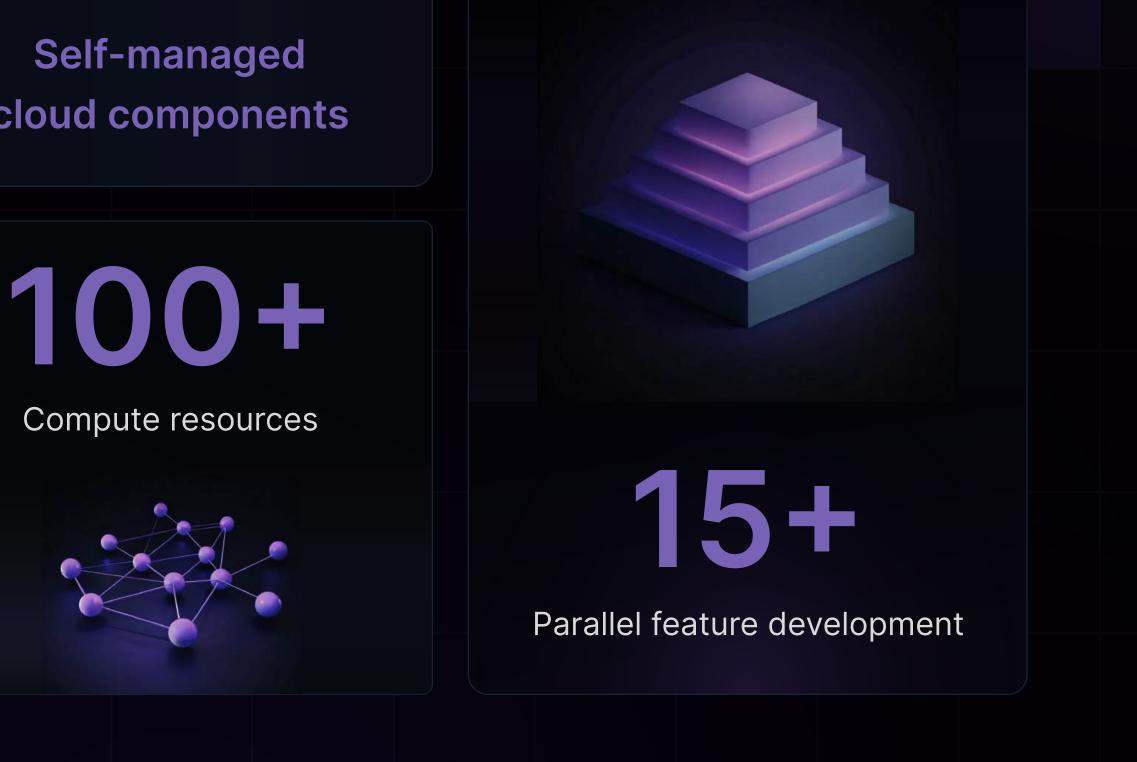
Problem statement

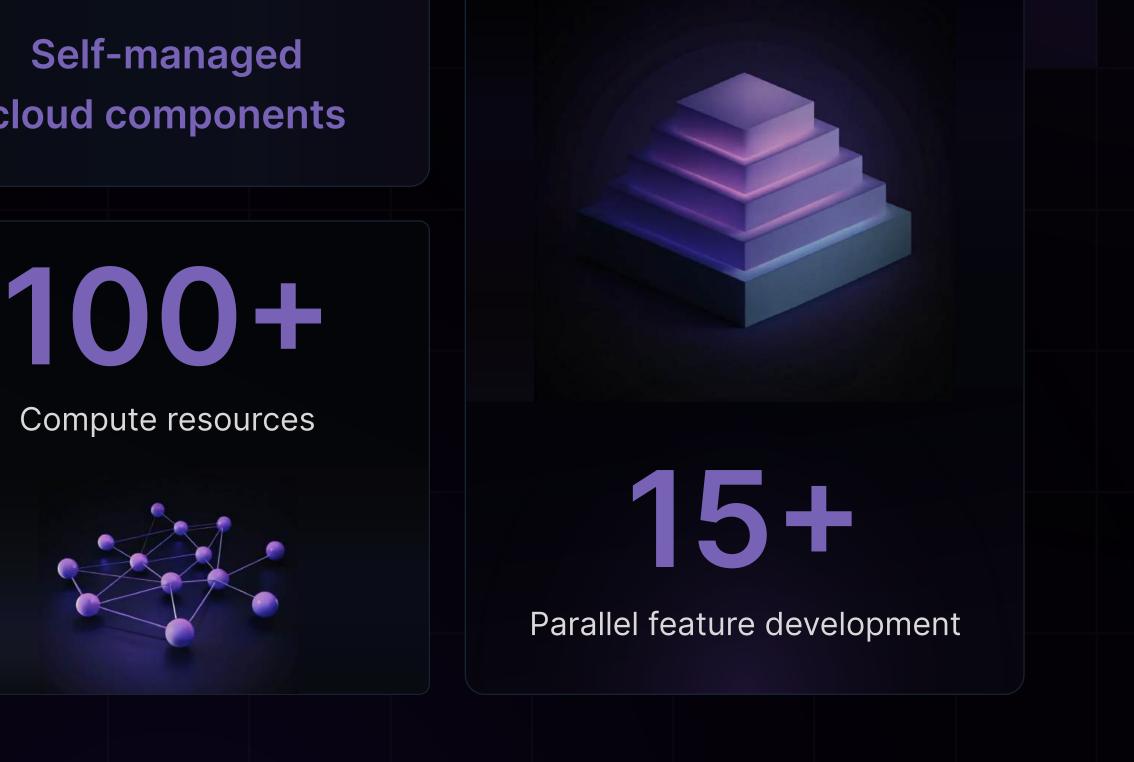


Challenges

Building an **ephemeral environment** for Pencil which consists of:









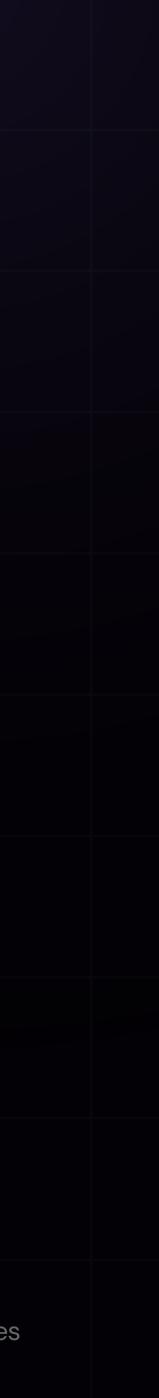
25+

Micro-services

Integrations



Challenges

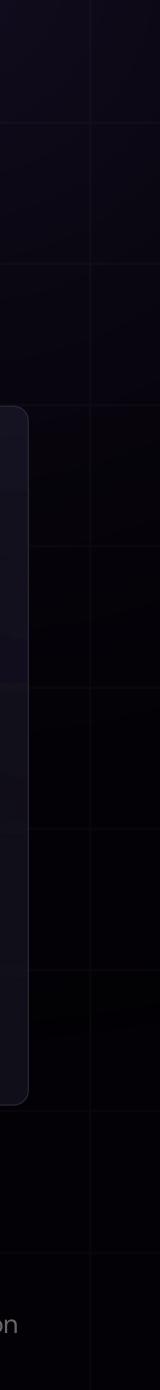




We implemented an automated workflow for ephemeral environments. When developers raise pull requests (PRs) with a feature tag (e.g., FeatureA), automation gathers all tagged PRs and spins up on isolated environment with all required components, such as micro-services, databases, and integrations. Once testing is complete, the environment is automatically deleted, ensuring efficient resource usage and a clean process.



Solution



Business impact

Delivery time

Achieved a 30% difference in delivery time

Optimised QA testing

Isolated environment for QA provides easiness and efficiency in testing





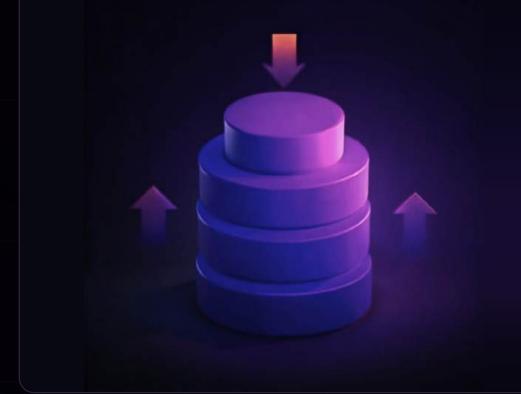


Client satisfaction

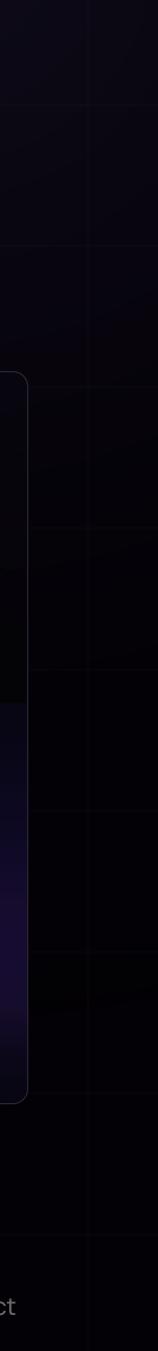
Timely delivers provides fulfilment to customer commitment

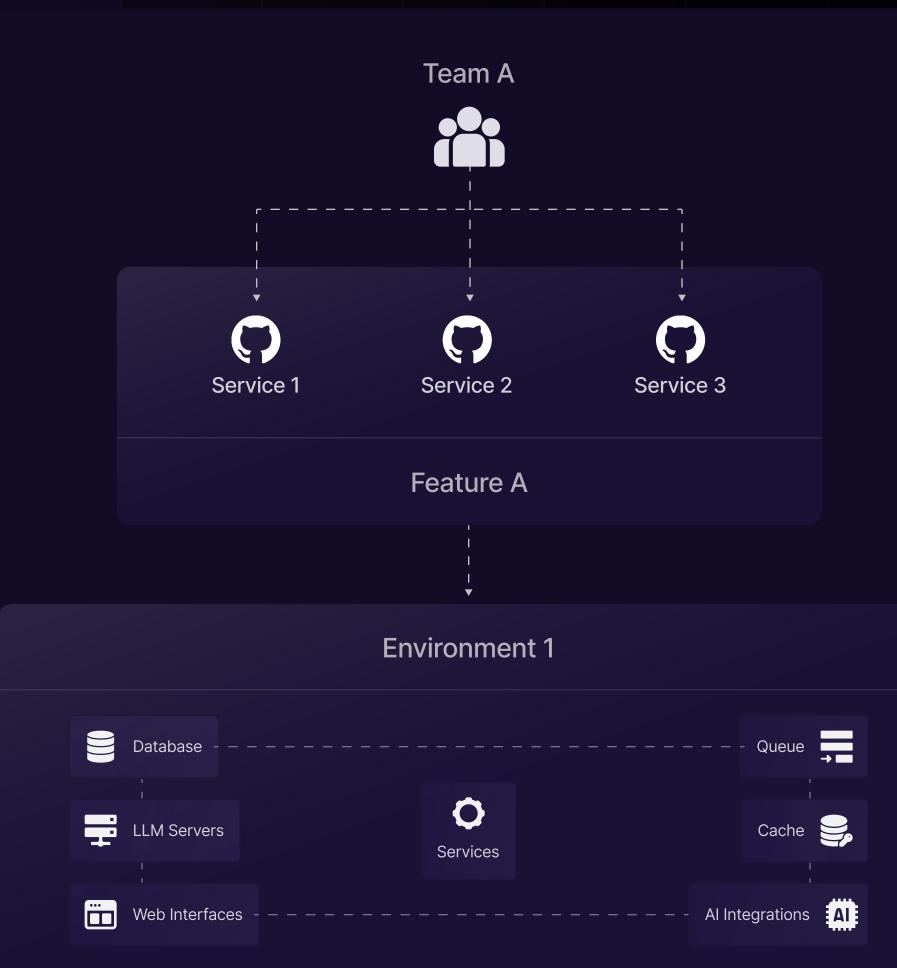
Faster development

Isolated environements accelerate development, enabling faster, reliable, feature launches



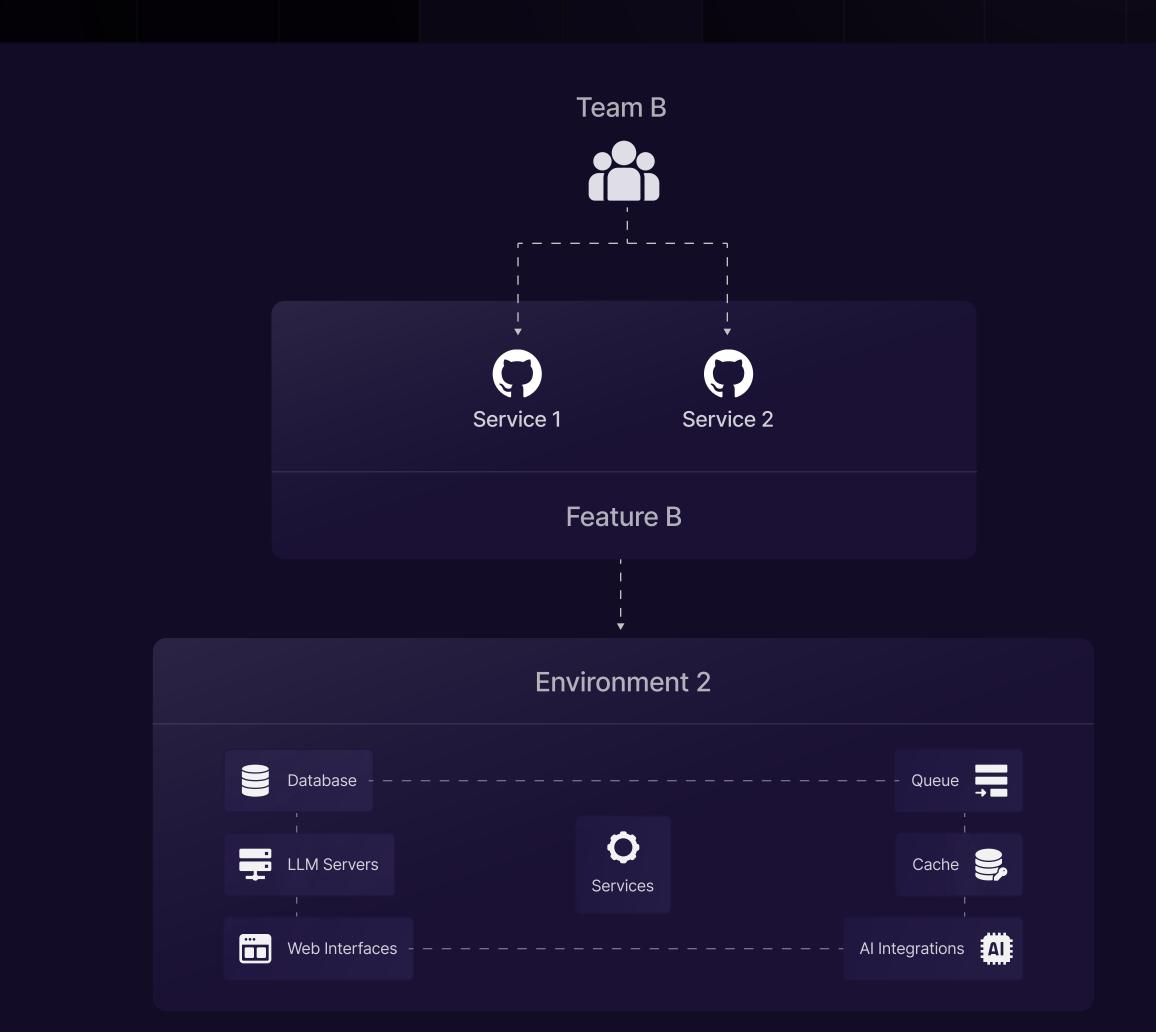
Business impact





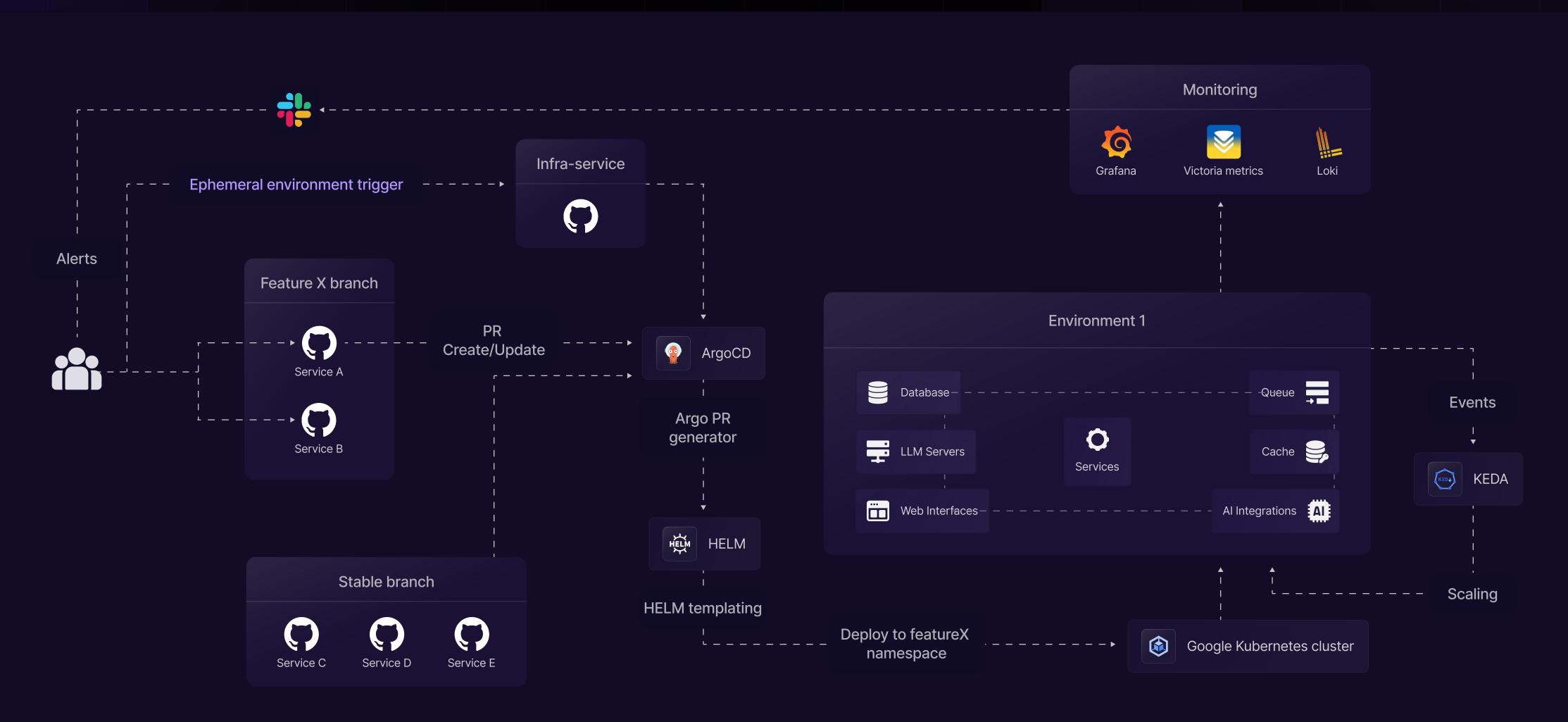


User flow





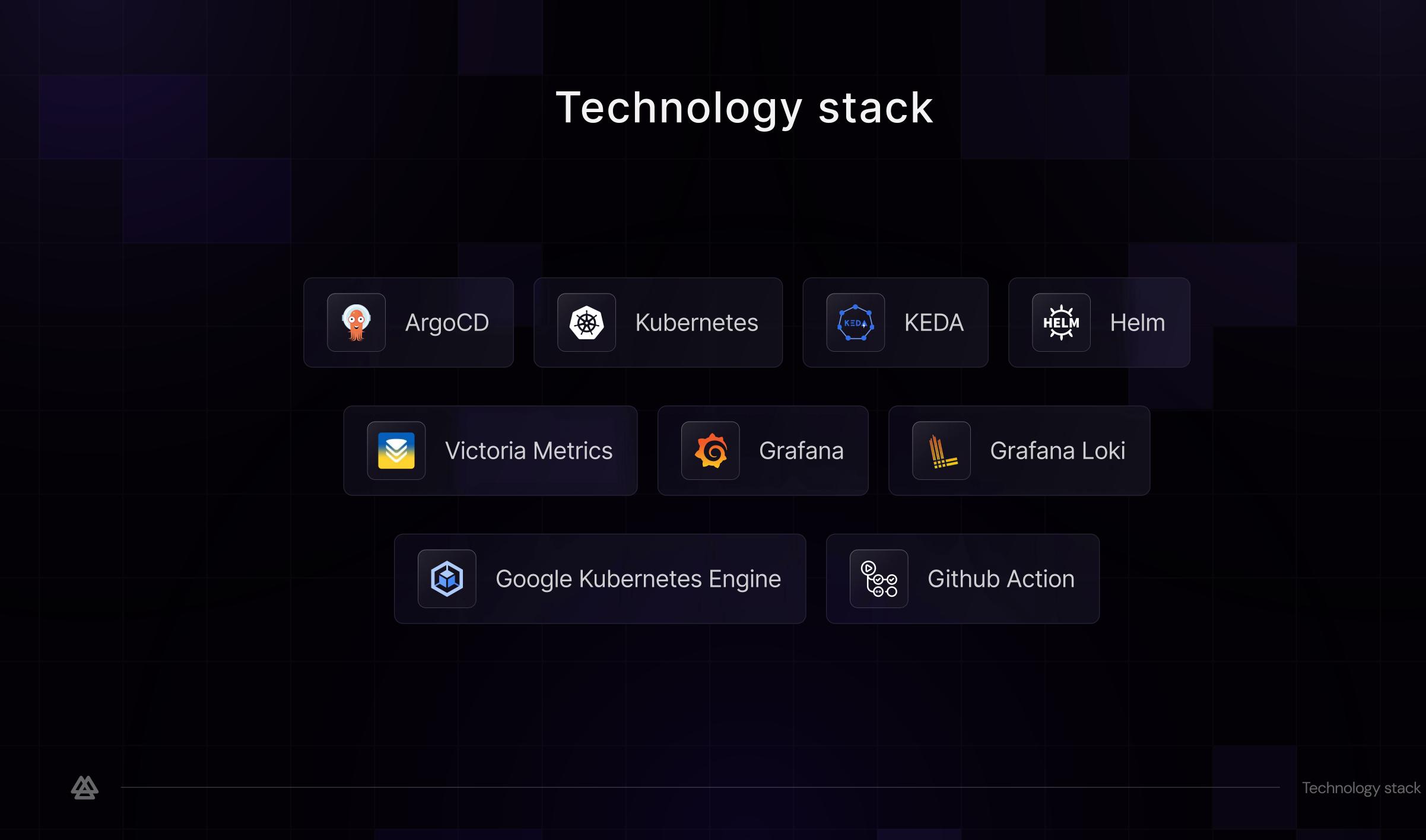
Technical solution diagram

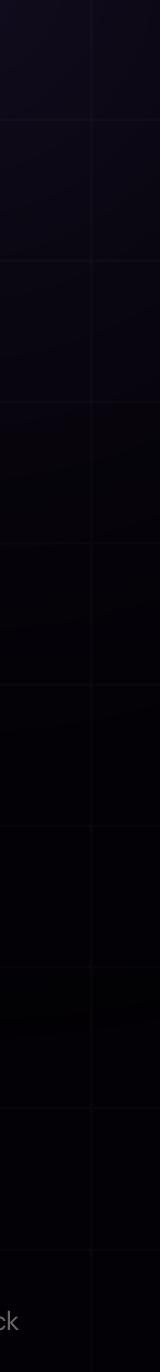




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Engineering challenges

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Database cloning

Automate isolated database setup for each environment

Automated setup

Streamline environment creation and teardown for efficient deployment

Customisable micro-service selection

Enable dynamic selection and deployment of only required microservices





Handling each ephemeral environment-specific secrets

On-demand scaling

Configure resources to scale based on load or API requests, reducing idle costs

Unified monitoring

Centralize monitoring and logging for all environments and targeted alerts for specific users

Engineering challenges

