JAN, 2024

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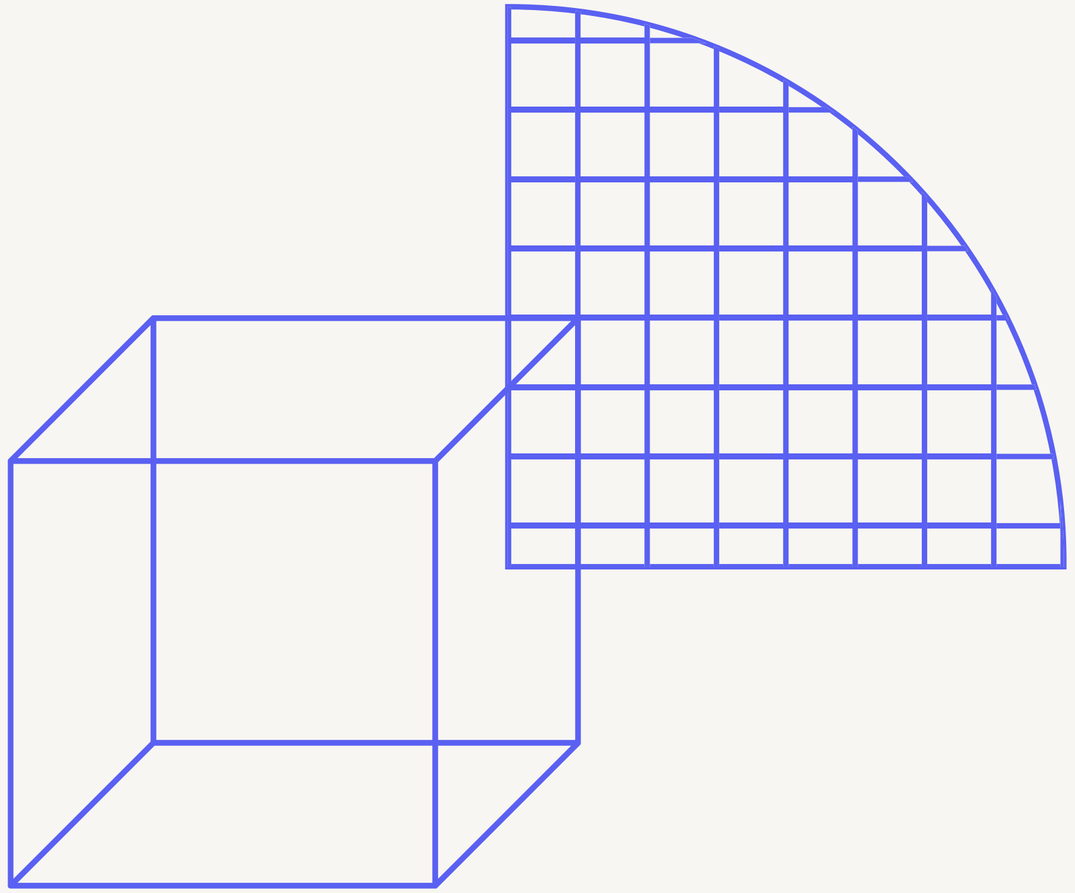
AI AS A CATALYST

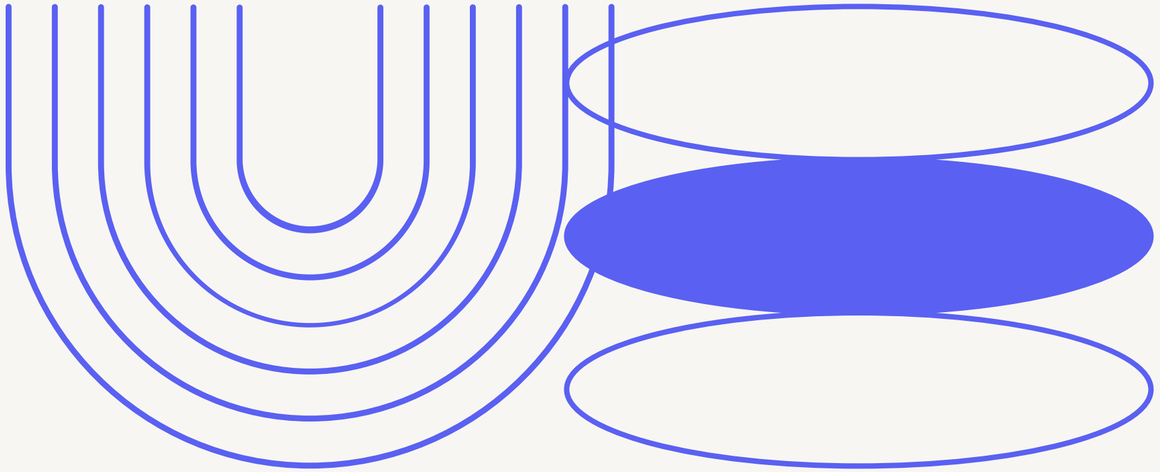
Redefining Resource Management in DevOps



SAURAV PANDA

Founder and CEO
Cloud Code AI, Inc.

Today's Agenda



WHAT WE'LL LEARN:

- Introduction to DevOps
- Evolution of DevOps
- AI and IaC
- Automated Optimization
- Enhancing Security with AI
- Error Detection and Self-Healing
- Conclusion

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ABOUT ME

I'm Saurav, Founder and CEO of Cloud Code AI, Inc.

Cloud Code AI is building a AI-enabled DevOps platform, which automates resource management

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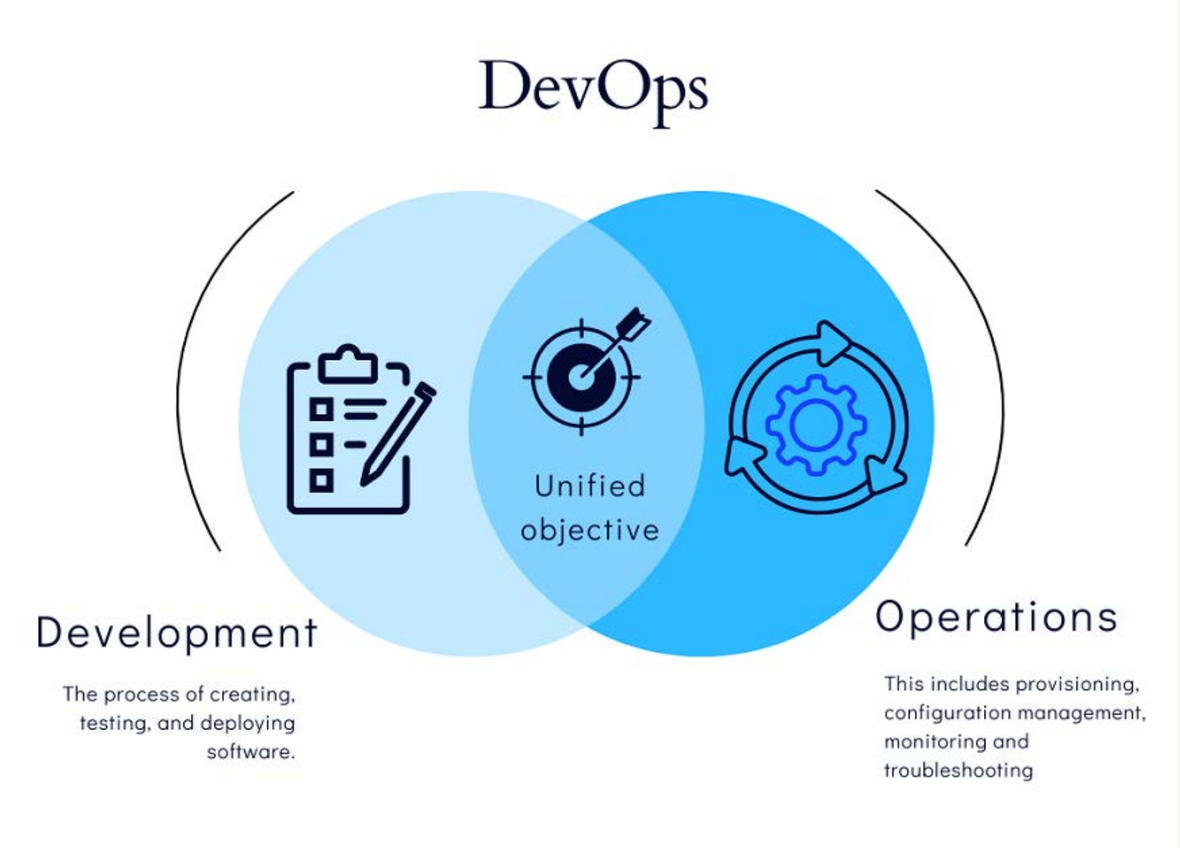
DevOps

DevOps combines development (Dev) and IT operations (Ops) for better collaboration, communication, and integration between software development and IT operations teams.



SOURCE: https://www.manageengine.com/products/applications_manager/tech-topics/what-is-devops.html

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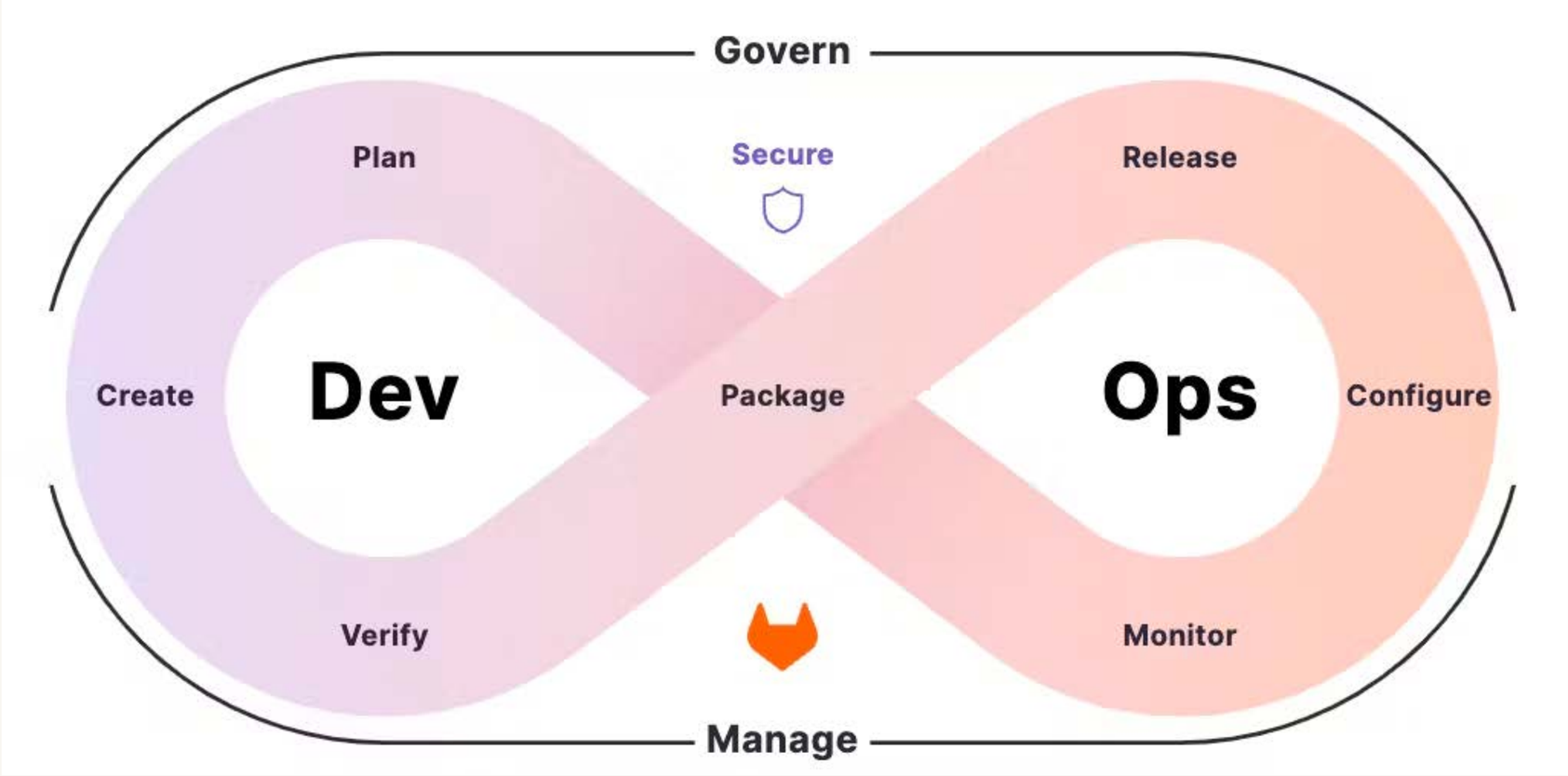
DevOps Pipeline



SOURCE:
https://about.gitlab.com/topics/devops/

Evolution of DevOps

2007

concept of DevOps emerged as a way to bridge the gap between software development and IT operations

2010

The term "DevOps" gained traction, with lively debates on Twitter using the hashtag #DevOps.

2015

DevOps was incorporated into the Scaled Agile Framework (SAFe), gaining more traction in the enterprise arena

2016

High-performing companies began adopting DevOps as the new norm

2019

Enterprises began embedding more IT functions, such as security, privacy, policy, and data, into their DevOps culture and processes

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Convergence of AI and DevOps

DevOps consist of lot of automation and involves steep learning curve to understand the current technologies

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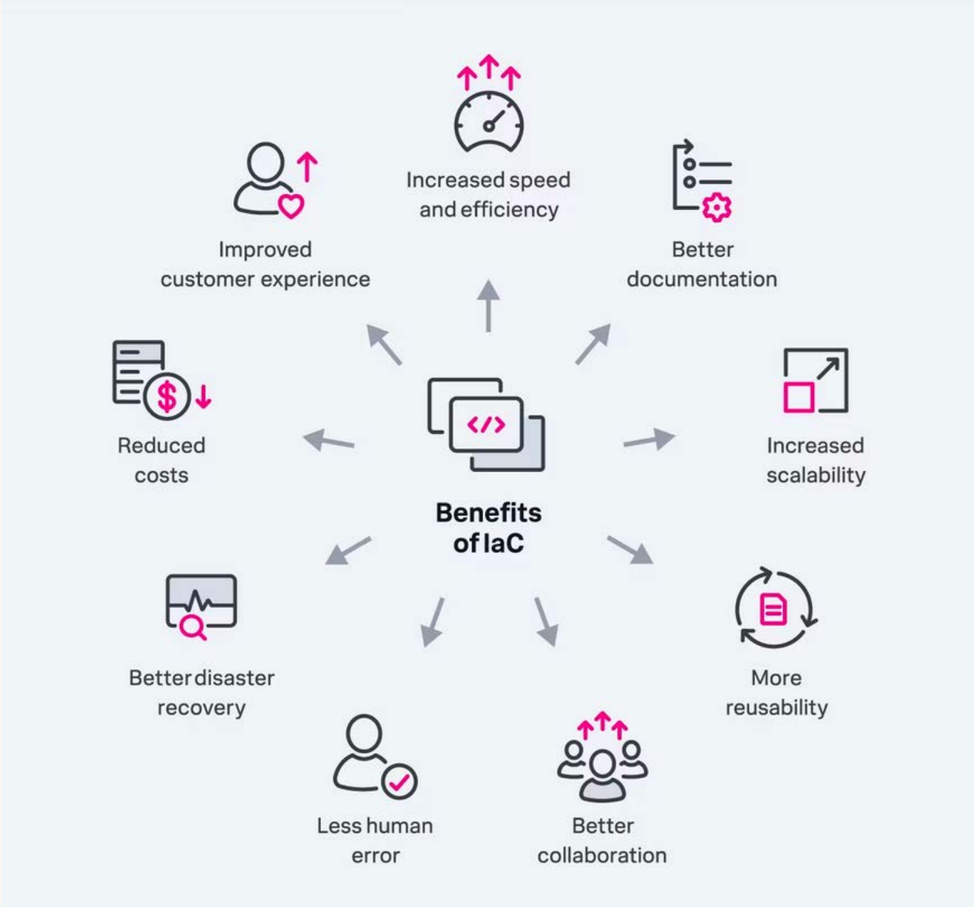
Understanding AI in IaC



Infrastructure as Code is a process of automatically provisioning and configuring infrastructure using Code and Scripts

SOURCE:
https://www.splunk.com/en_us/blog/learn/infrastructure-as-code-iac.html

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Understanding AI in IaC

Automated IaC Generation

AI can automate the generation of IaC code based on natural language queries, reducing the need to write code from scratch or use templates

Cost Optimization

AI can optimize infrastructure design, identify cost-saving opportunities and improve efficiency.

Proactive Assistance

AI tools like GitHub Copilot can assist in generating IaC code, providing a head start for DevOps engineers and increasing productivity

Quality and Security

Using AI, SRE and DevOps engineers can ensure the quality and security of their DevOps pipeline.

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Case Study: Generating Serverless API

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Automated Optimization

Infrastructure optimization

AI insights aid DevOps teams in adapting to usage patterns, anticipating demand, and optimizing infrastructure with minimal human intervention.

Resource Optimization

AI can help analyze historical data, usage patterns, and performance metrics to optimize resource allocation and ensure efficient use of infrastructure

Automated testing

AI can be used to automate the testing process, improving the speed and accuracy of testing.

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Enhancing Security and Compliance

Improving Security

AI can help identify and mitigate security vulnerabilities faster by analyzing code and suggesting improvements.

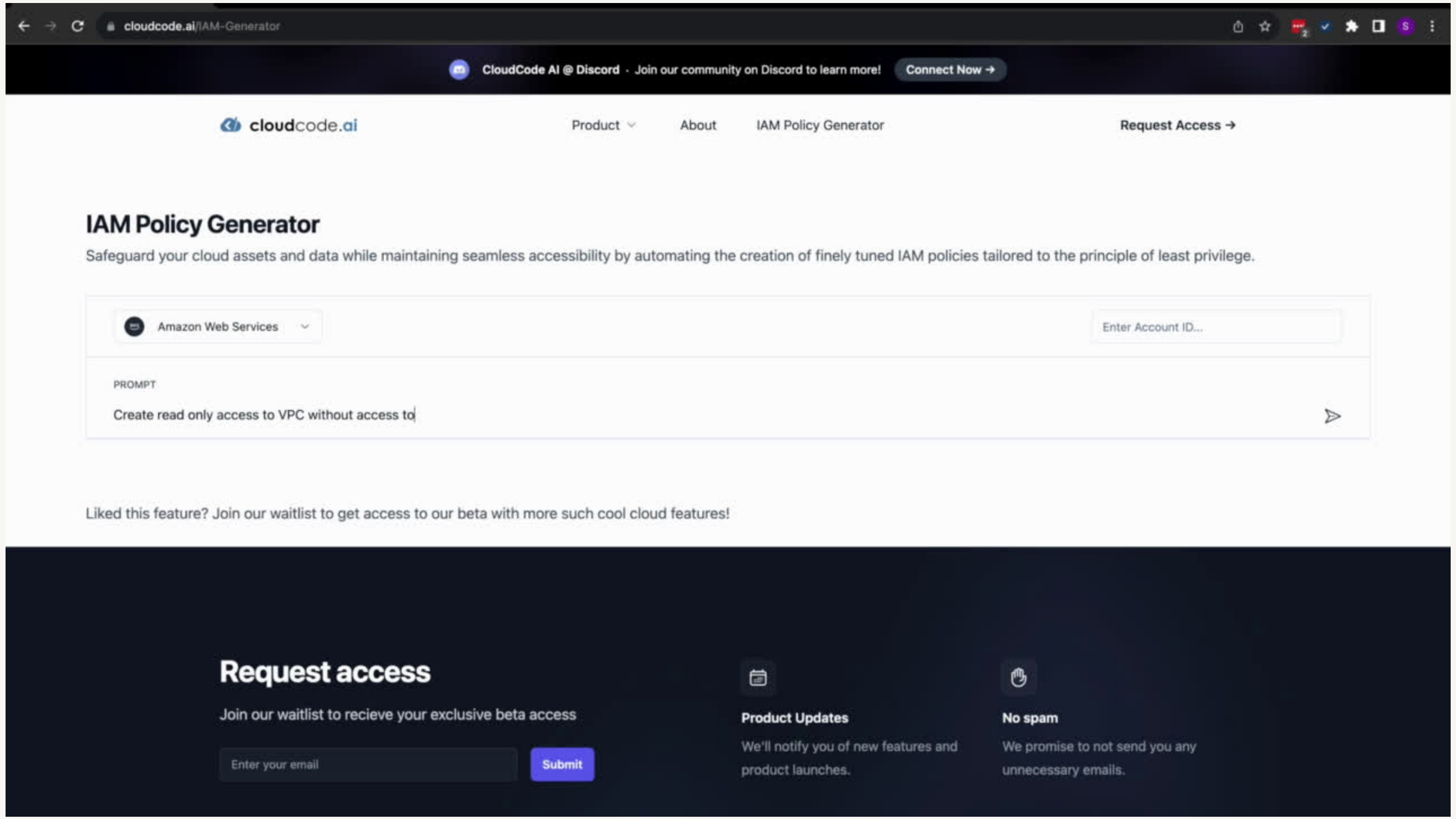
Automated Compliance Checks

AI can automate standard or user-generated compliance checks, resulting in faster development.

Access Control and Identity Management

IAM and Access control are very important for security. AI can generate an IAM policy based on usage.

Case Study: IAM Policy Generation



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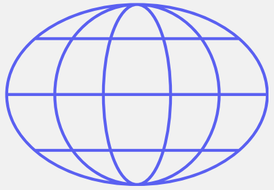
Error Detection and Self-Healing Systems

SELF HEALING

AI-powered self-healing systems can automatically detect and resolve issues, reducing the need for manual intervention and significantly improving system reliability



PREDICTIVE ANALYTICS

AI can be integrated into DevOps monitoring tools to predict and notify teams often before issues occur

ANOMALY DETECTION

AI tools can proactively detect anomalies in engineering code and data and respond with corrective actions

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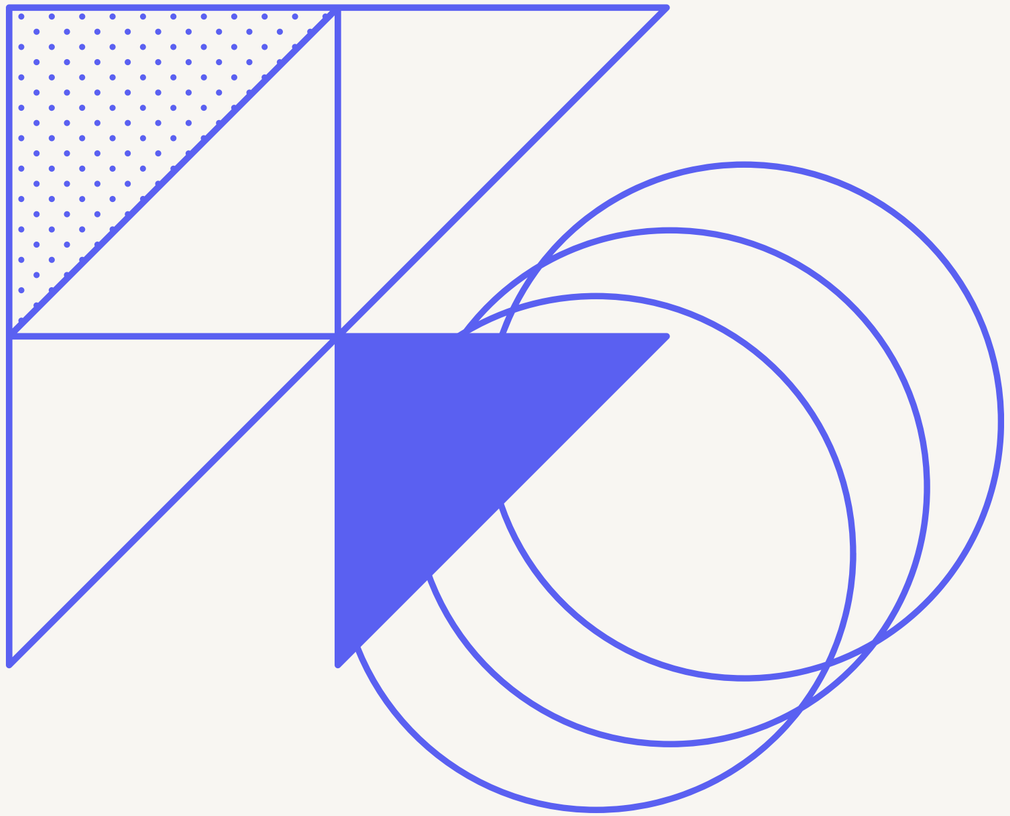
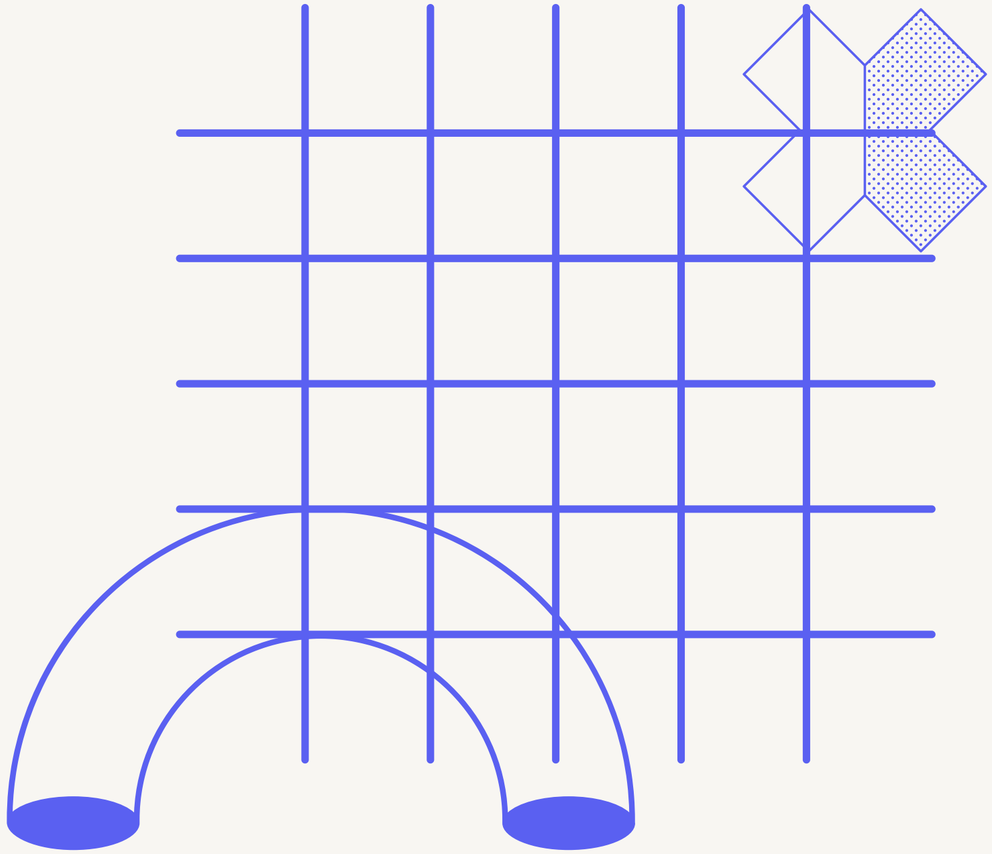
Conclusion Slide



AI will be a game-changer in IT resource management, and AI-powered DevOps tools are going to supercharge Software Development.



Thank you!

Email us at saurav@cloudcode.ai
if you have more questions.