

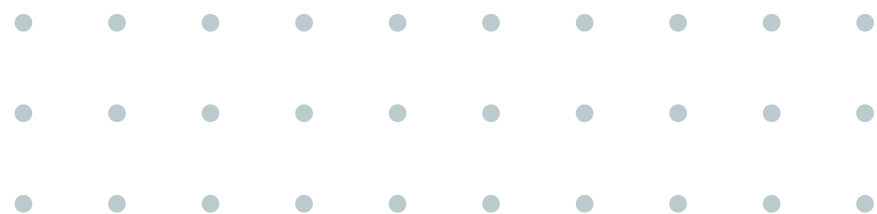
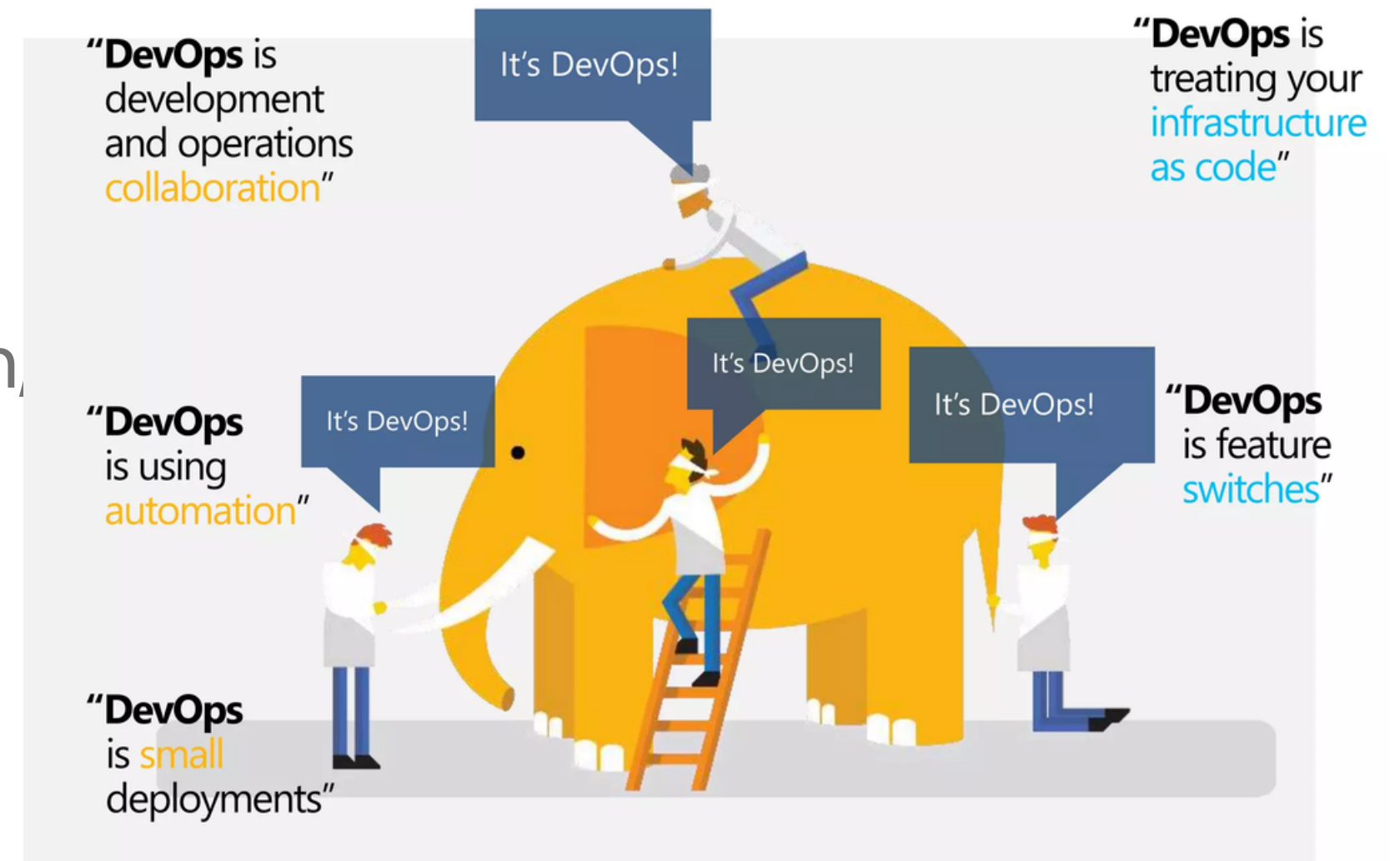
LEND

Presented by:

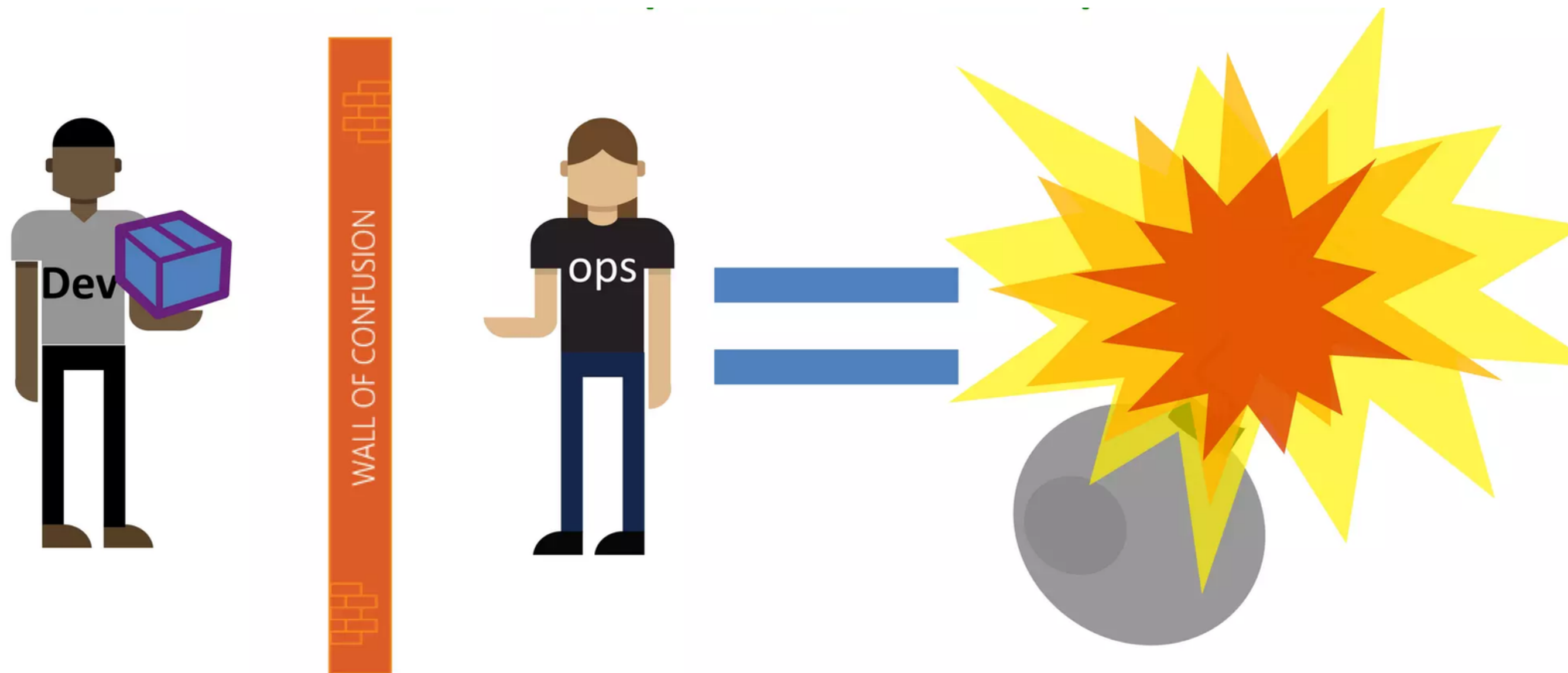
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INTRODUCTION

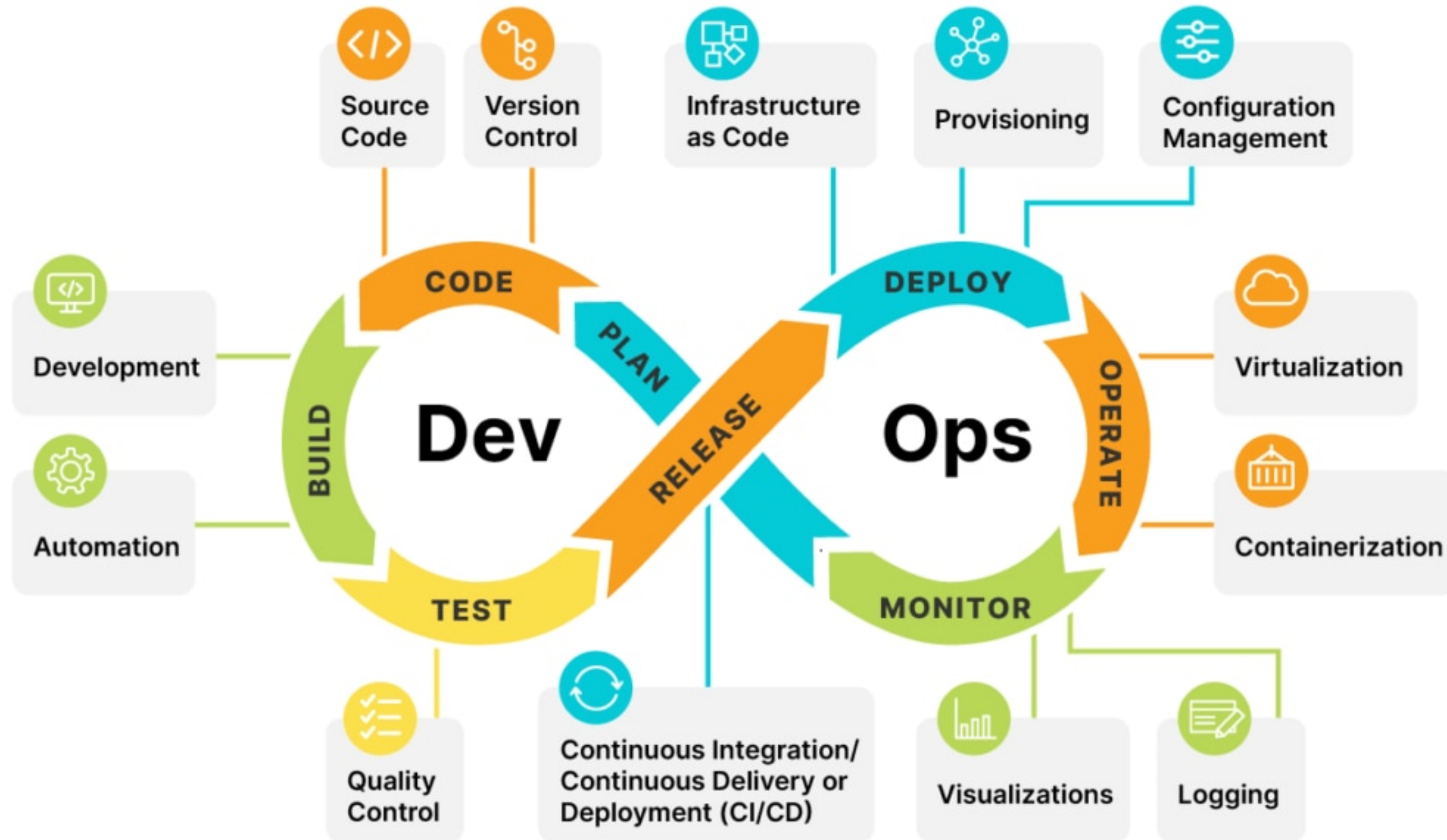
- **Definition** : DevOps is a set of practices that combines software development (Dev) and IT operations (Ops) to shorten the systems development life cycle while delivering features, fixes, and updates frequently, in close alignment with business objectives.
- **Key Principles** : Collaboration, automation, continuous integration, continuous delivery, monitoring and feedback.



TRADITIONAL PRACTICE



DEVOPS LIFE CYCLE



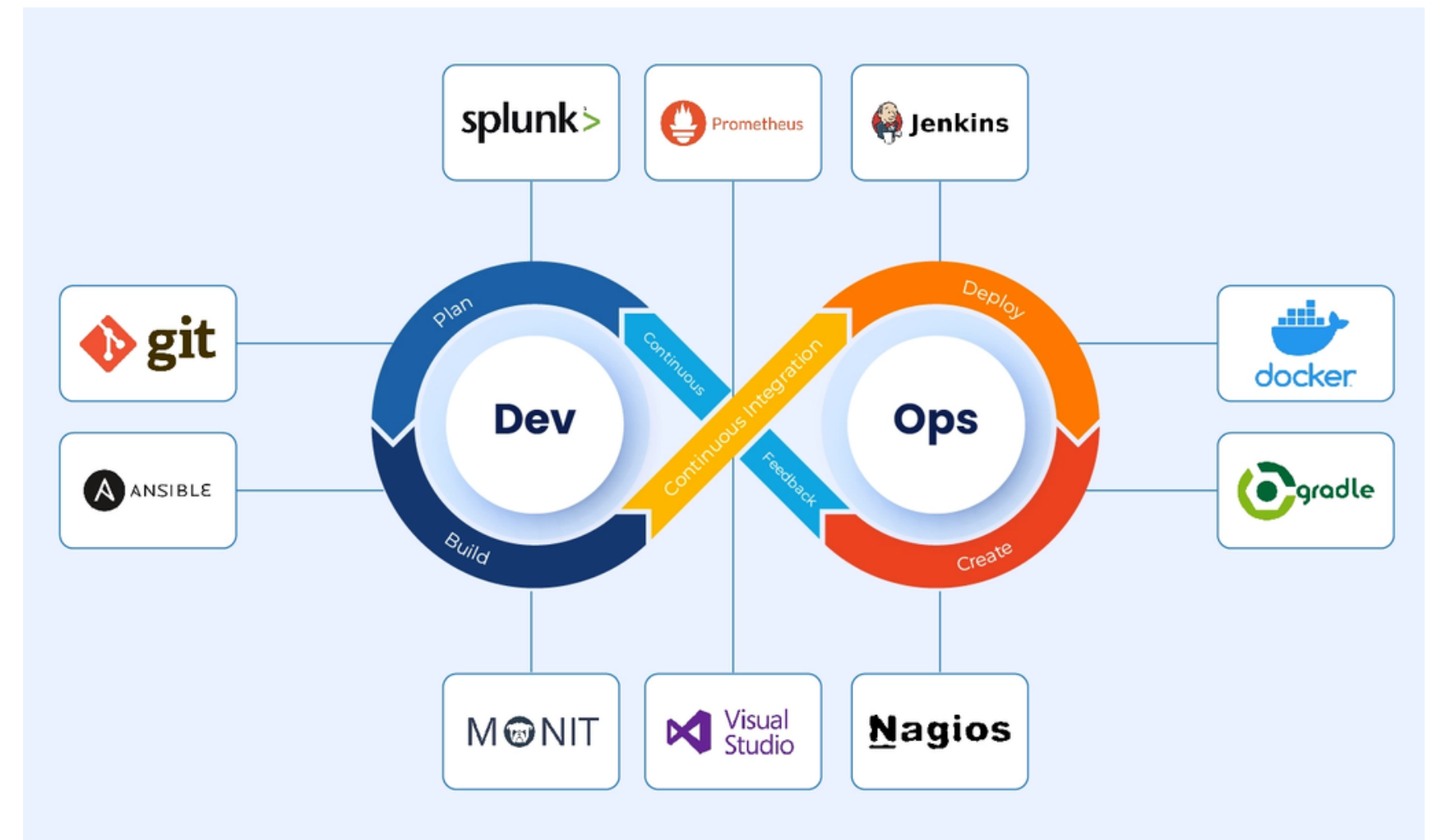
DEVOPS PRACTICES



- **Continuous Integration (CI):** Developers regularly merge their code changes into a central repository, where automated builds and tests are run.
- **Continuous Delivery (CD):** Automated processes ensure that code changes can be deployed to production quickly and safely at any time.
- **Infrastructure as Code (IaC):** Infrastructure is managed through code, allowing for consistent, repeatable provisioning and configuration of resources.
- **Monitoring and Logging:** Continuous monitoring of applications and infrastructure provides insights into performance, availability, and security.

DEVOPS TOOLS

- **Version Control:** Git, Subversion
- **Continuous Integration:** Jenkins, CircleCI, Travis CI
- **Configuration Management:** Ansible, Chef, Puppet
- **Containerization:** Docker, Kubernetes
- **Monitoring:** Prometheus, Grafana, ELK Stack (Elasticsearch, Logstash, Kibana)
- **Testing:** Selenium, JUnit, pytest, Cucumber



BENEFITS OF DEVOPS

- **Faster time to market:** DevOps enables rapid development, testing, and deployment, reducing the time it takes to deliver new features and updates.
- **Improved quality:** Continuous integration and automated testing help identify and fix issues early in the development cycle, resulting in higher-quality software.
- **Increased efficiency:** Automation of repetitive tasks and streamlined processes improve productivity and resource utilization.
- **Enhanced collaboration:** DevOps fosters closer collaboration between development, operations, and other teams, leading to better communication and alignment of goals.



CHALLENGES OF DEVOPS

Cultural Resistance: Overcoming resistance to change and breaking down organizational silos.

Complexity: Managing complex systems and toolchains.

Security: Ensuring security and compliance in DevOps practices.

Skill Gap: Addressing skill gaps and providing training for team members

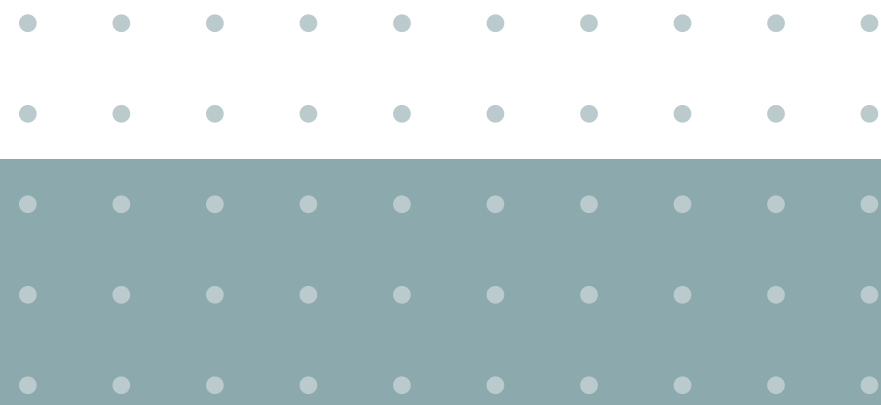


Continuous Testing

- Focus:** • Ensures quality through automated testing at every stage of development.
- Scope:** • Primarily focuses on testing activities like unit, integration, and regression testing.
- Integration Points:** • Integrated into the development process to provide rapid feedback on code changes.
- Cultural Impact:** • Fosters a culture of quality, collaboration, and accountability for product quality.

Devops

- Streamlines development, deployment, and operations for faster, more reliable software delivery.
- Encompasses a wider range of practices including automation, CI/CD, and infrastructure as code.
- Integrates development, testing, deployment, and operations into a seamless, automated workflow.
- Promotes a cultural shift towards shared responsibility, collaboration, and continuous feedback across teams.



THANK YOU

