



The Art of Shift-Left Software Development



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Story time

Launched a new company and developed an monolithic application to move fast. Begged family and friends to be users, but quickly grew to 10,000 subscribers...



Story time:

This is no fairytale

We hadn't implemented solid development or operations processes, had no visibility into the performance of our services and could not manage demand without compromising performance.



Developers
want to build
AWESOME
products.



“ You build it, you run it.

- Werner Vogels (CTO, Amazon)



Expectations Are Higher and the landscape changing consistently



Ship Faster



Modern Applications



Drive Outcomes



Less Errors

**Solving problems,
fixing errors, software
security are a fact of a
developer's life.**
(unfortunately)



Mostly
Reactive



Too Much
Noise



Not Enough
Context

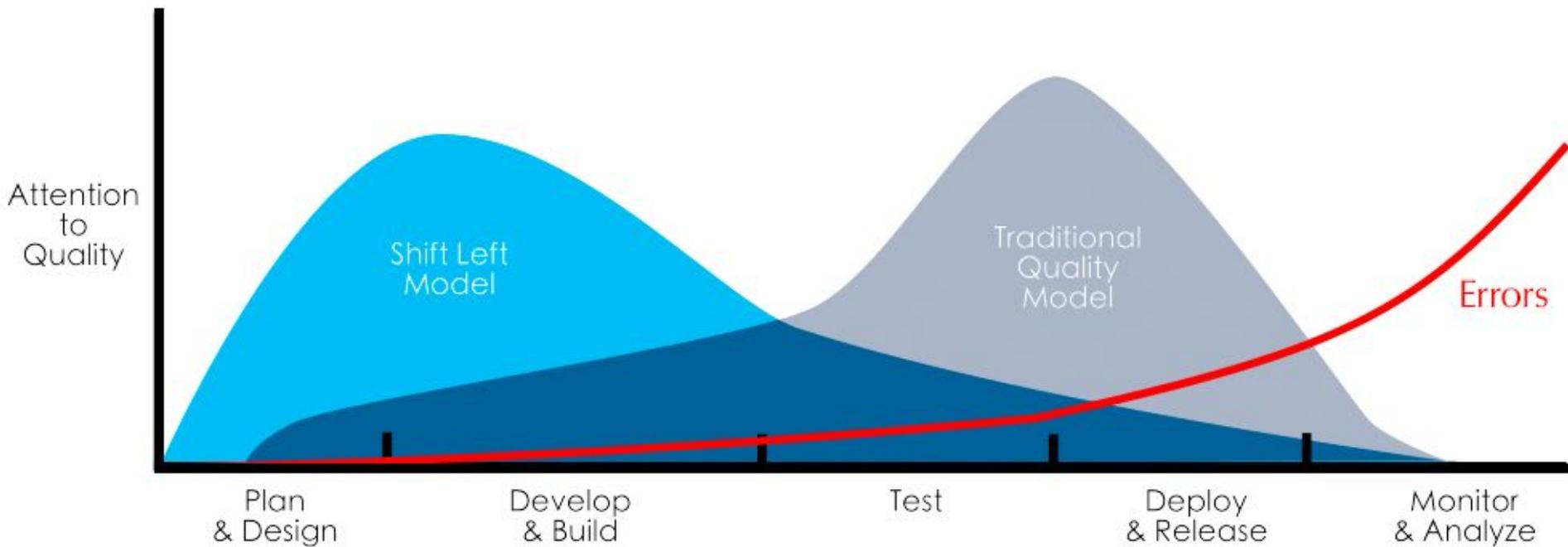
WTH is Shift-Left Software Development?

I've just said a lot of things,
so let's dive in:

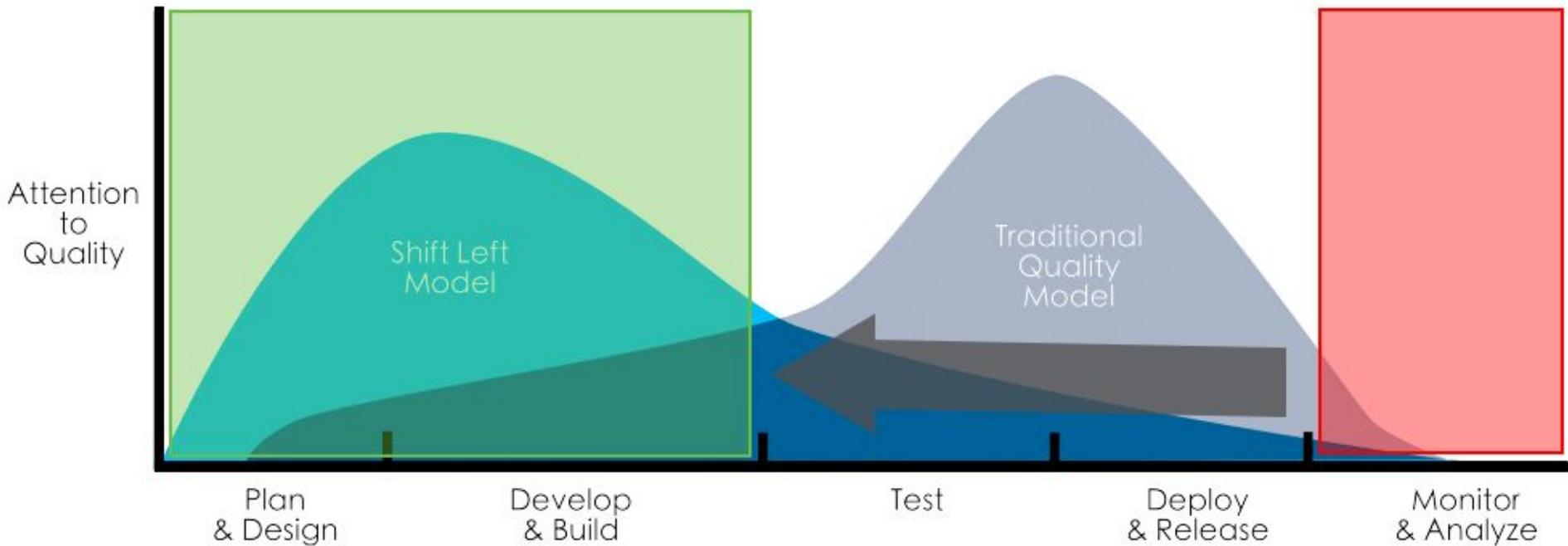
- What is shift left?
- Why should I care?
- Okay, so how?



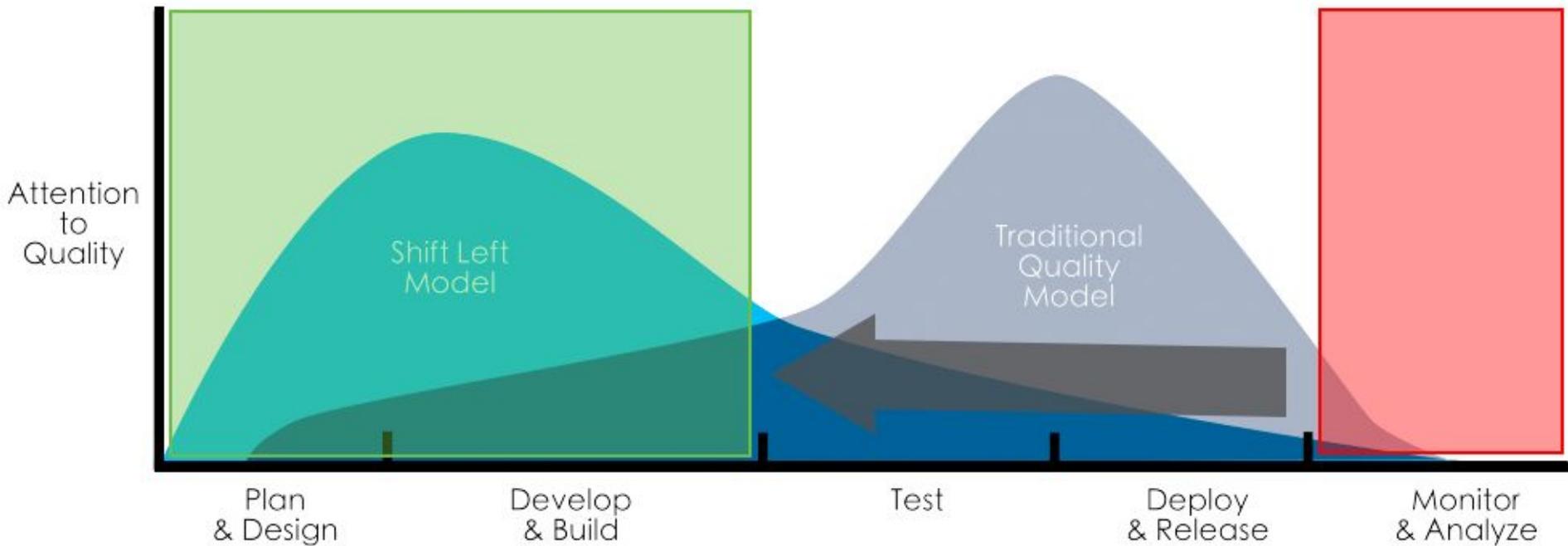
Shift-left development overview



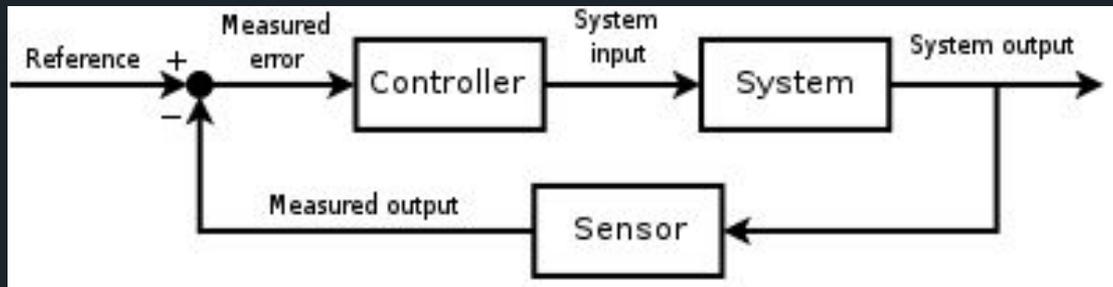
Shift-left development overview



Shift-left development overview



WTH is Observability?



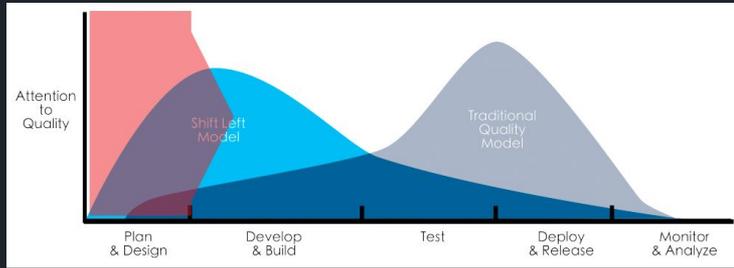
Observability - Modern Control Theory

Understand internal states of a system from external outputs.

*Do you know **why**, **how**, and **what** will happen if we do X, Y, or Z with these conditions?*

Best practices
for shift-left
software
development...
the roadmap

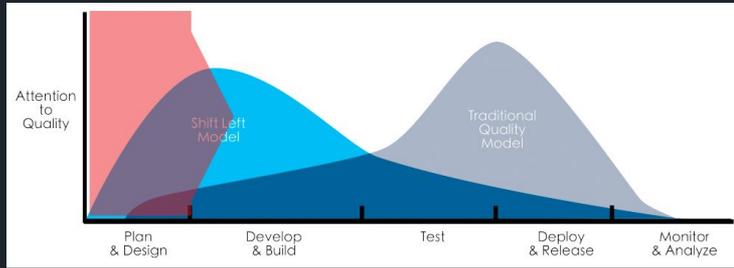




The Plan & Design Phase

Start planning early. Moving your planning forward

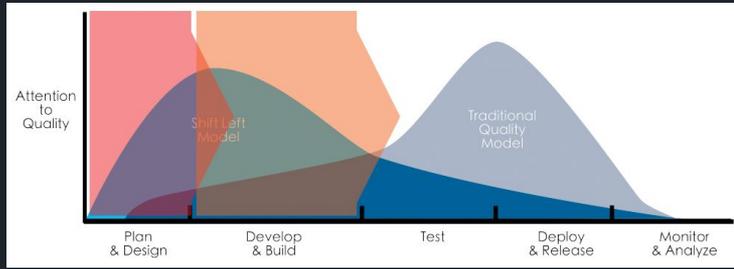
- Define your O11y and security requirements as a part of your planning
- Identity KPIs and security requirements based on standards
- Select your metric collection methods
- Define security controls, access policies, authentication methods and etc. with you application architecture



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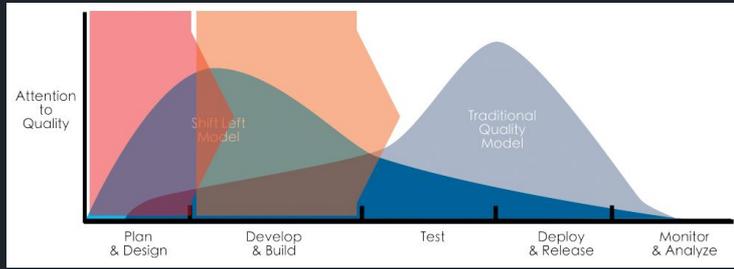


The Develop & Build Phase

Implementing frameworks and getting access to your application data

- Instrument your code with selected frameworks/libraries to capture needed metrics, logs, and to prevent common security threats
- Check your selected open-source packages for vulnerabilities and known exploits
- Implement distributed traces to trace request and identify bottlenecks within microservices
- Implement secure coding practices, input validations, and output encoding.



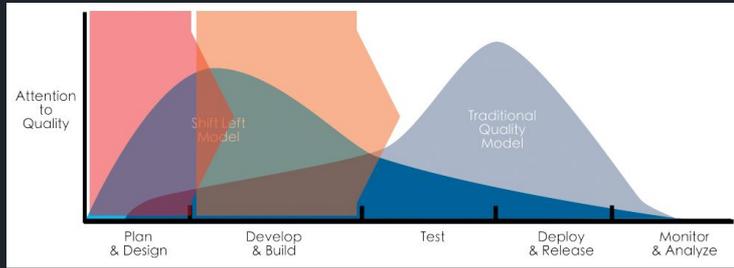


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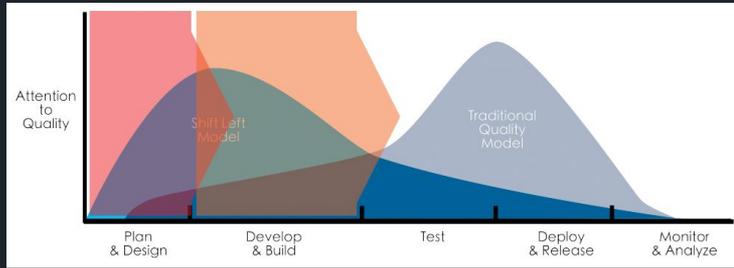




The Test Phase

Start testing activities as early as possible

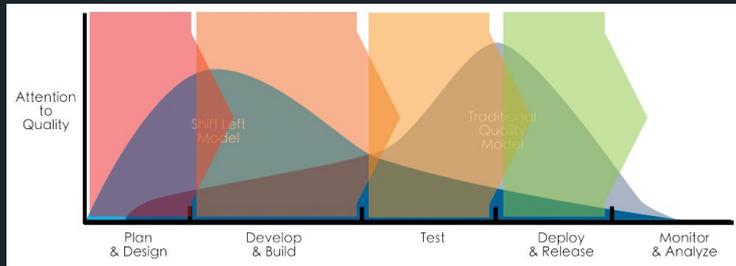
- Leverage automated test and testing frameworks for continuous testings – Include unit testing, integration testing, and functional testing
- Validate logs, metrics, and traces during test runs to ensure proper observability coverage
- Conduct vulnerability assessments and penetration testing
- Test for common vulnerabilities, such as injection attacks, authentication bypasses, and insecure configurations.



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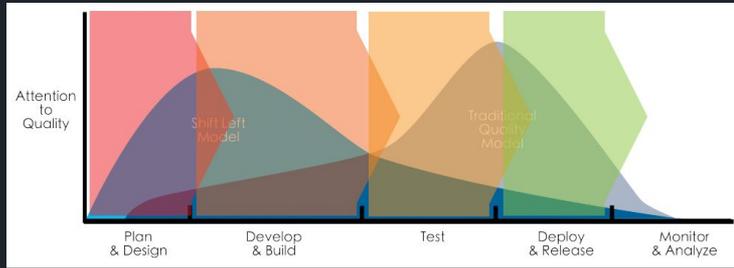
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The Deploy & Release Phase

Automation is key

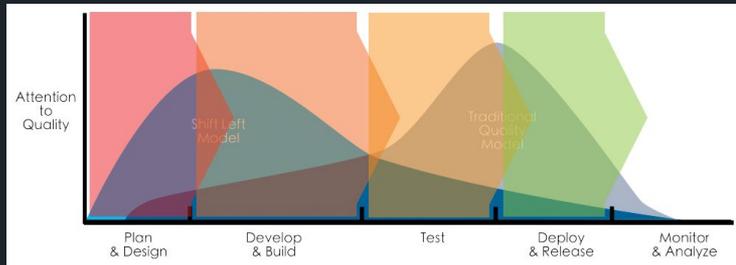
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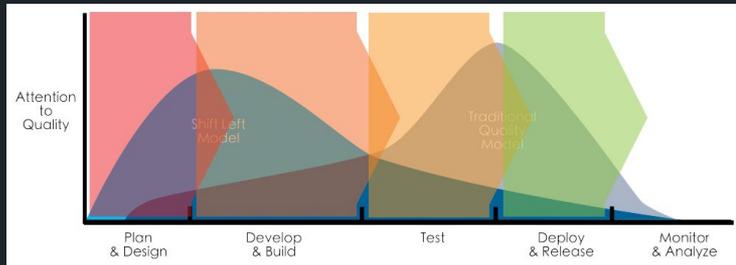
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The Monitor & Analyze Phase

Monitor, analyze, and repeat

- Use your observability tools and data to proactively identify issues in production
- Implement anomaly detection and alerting practices
- Updates your packages, libraries, and frameworks
- Develop an incident response procedures



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***Although we've
come to the **end**
of the **roadmap*****

**Here are some helpful tips
for starting your journey.**



A moment about me...

Jemiah Sius

Senior Director, Product Management

- Miami native (Go Heat!)
- Designer turned Software Developer
- 15+ years coding JavaScript/PHP
- Passion for community building
- Lifelong learner



LinkedIn



SCAN ME

Twitter



SCAN ME

Thank you!

