



“Releasing Fast and Staying Compliant: DevOps and Delivery at Kuveyt Turk Bank”

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Who is Kuveyt Türk

12m +
customers

425
branches

400
engineers

5.843
employees

15m \$
R&D
budget
(yearly)

688
ATMs

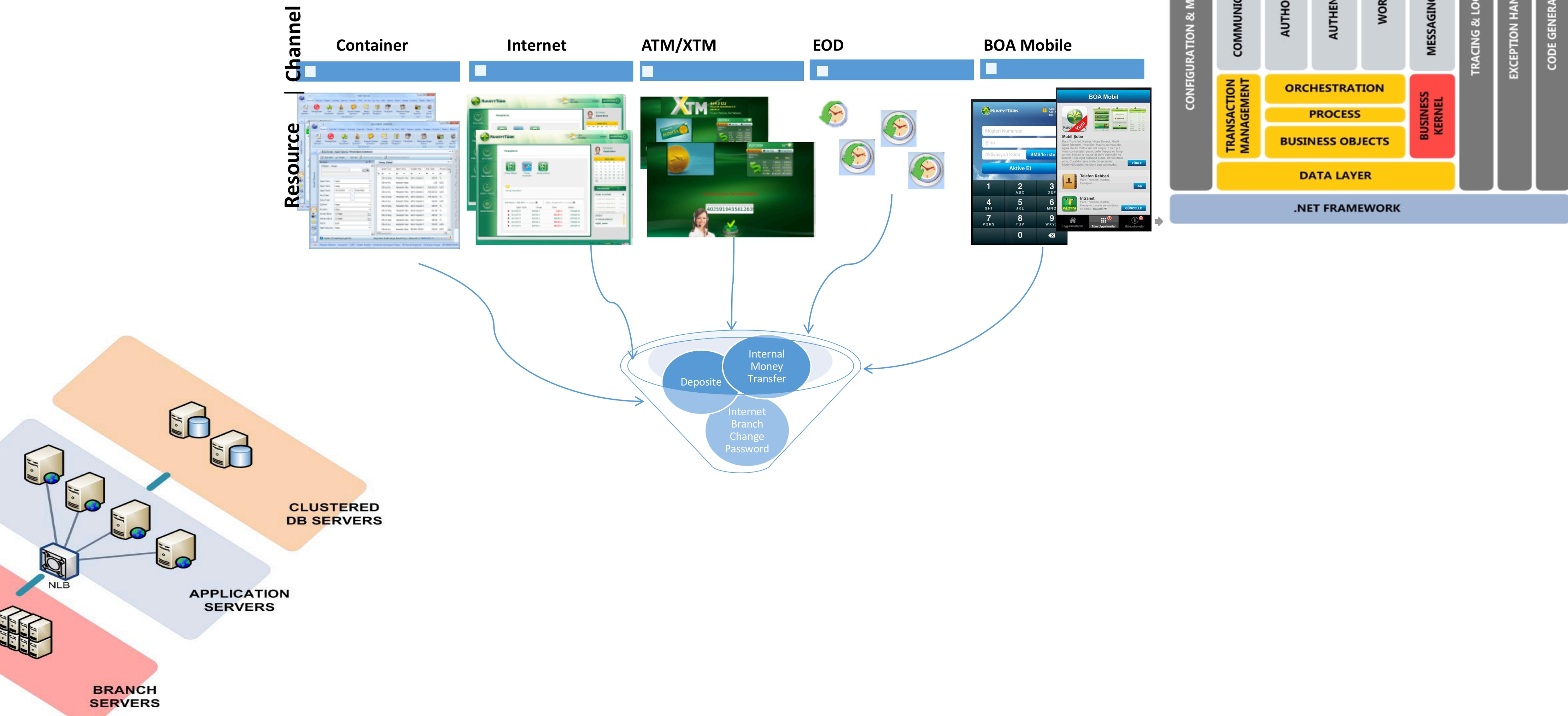
Our Strategy

Kuveyt Turk DevOps Goals

- #1 – Speed innovation of banking platform while increasing reliability**
- #2 – Minimize impact of compliance auditing on business performance**
- #3 – Reduce test times and increase quality**
- #4 – Continually improve infrastructure and delivery process to improve service quality**
- #5 – Break down barriers and silos between departments to drive faster updates.**

KT DevOps Implementation

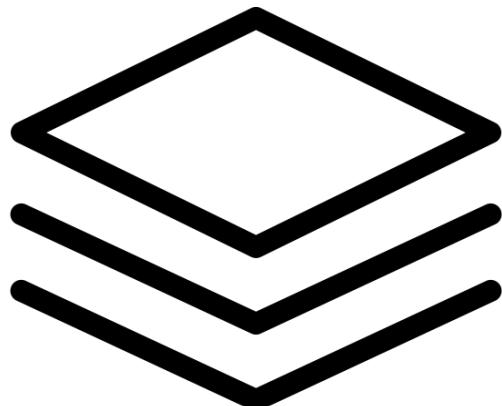
Core Banking Architecture



Project Highlights

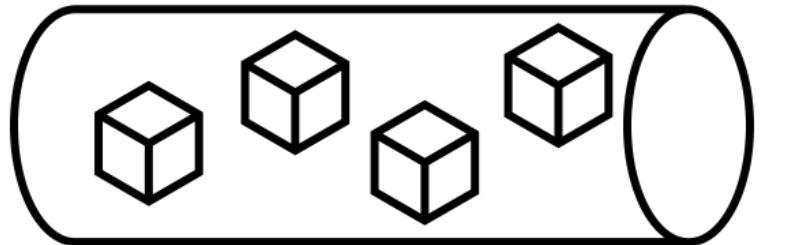
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Applications



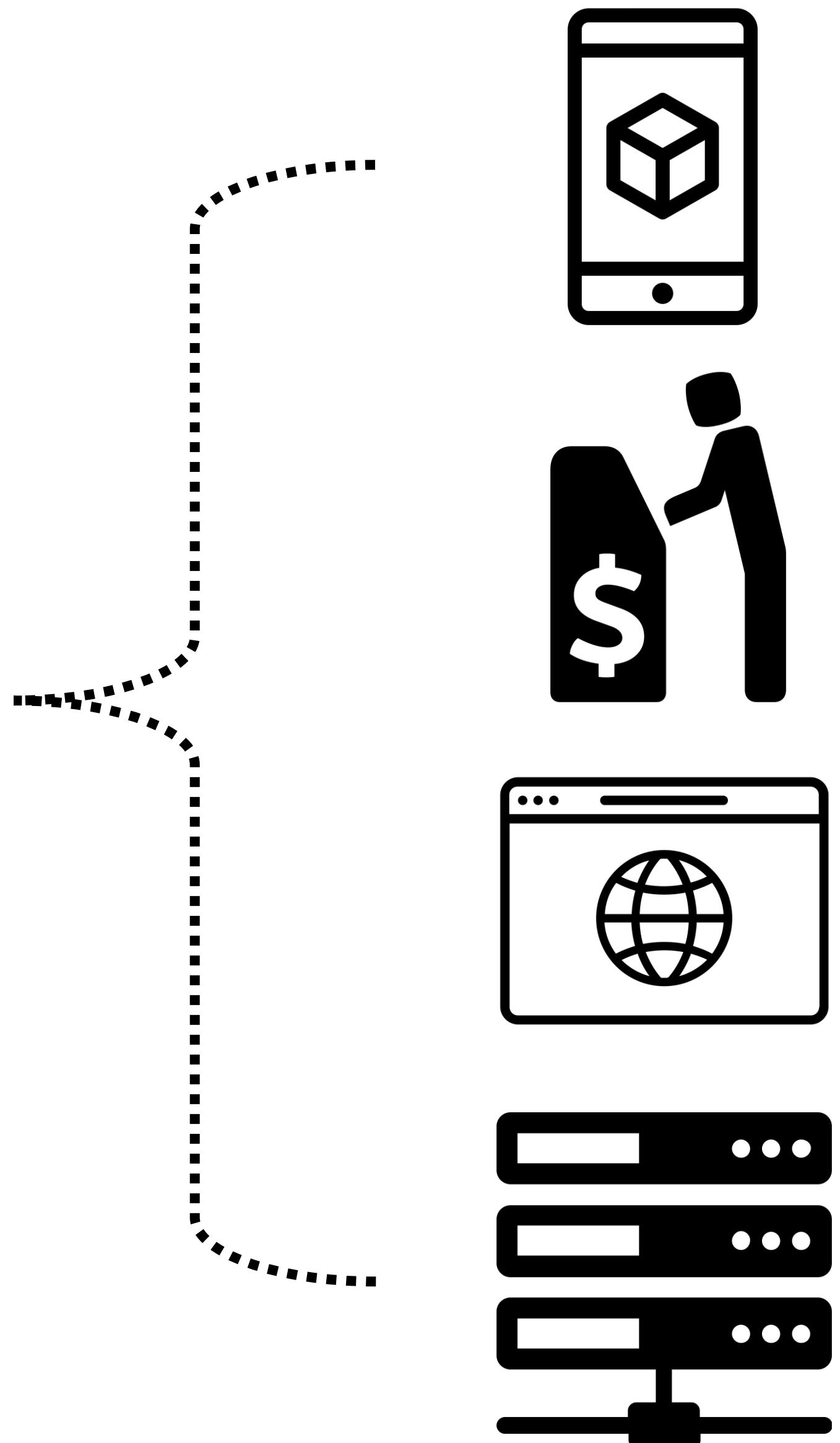
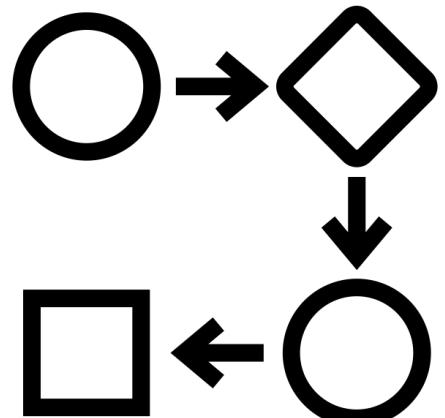
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Pipelines



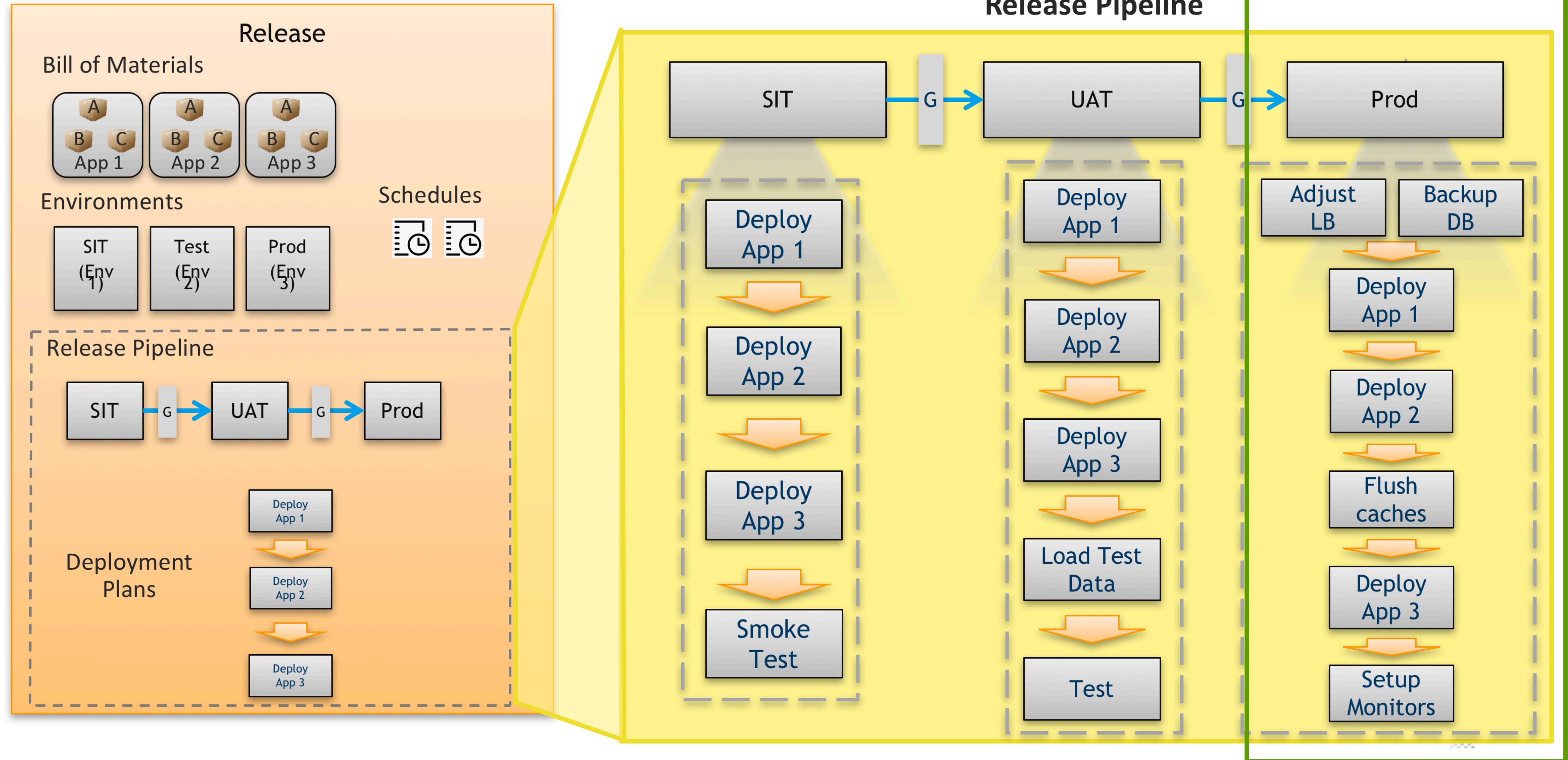
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Deployment
Workflows



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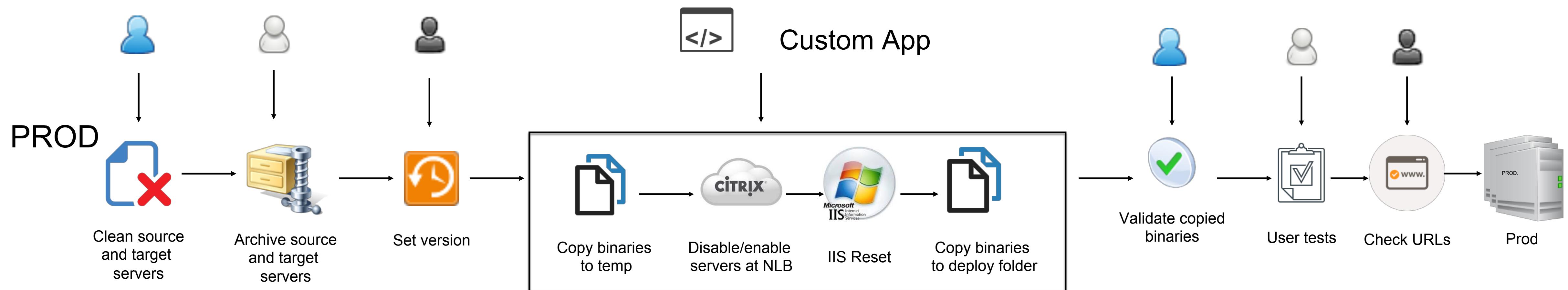
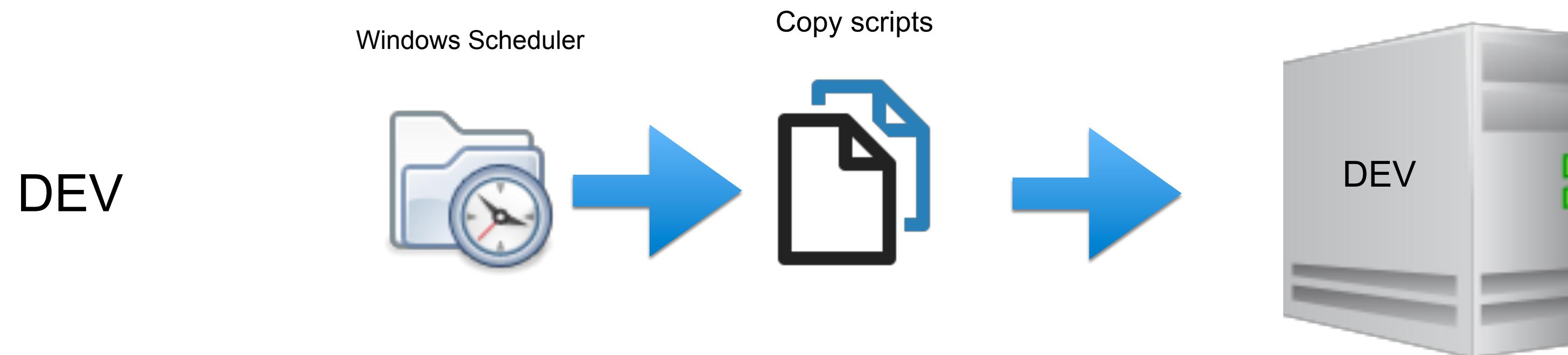
Target Release Pipeline



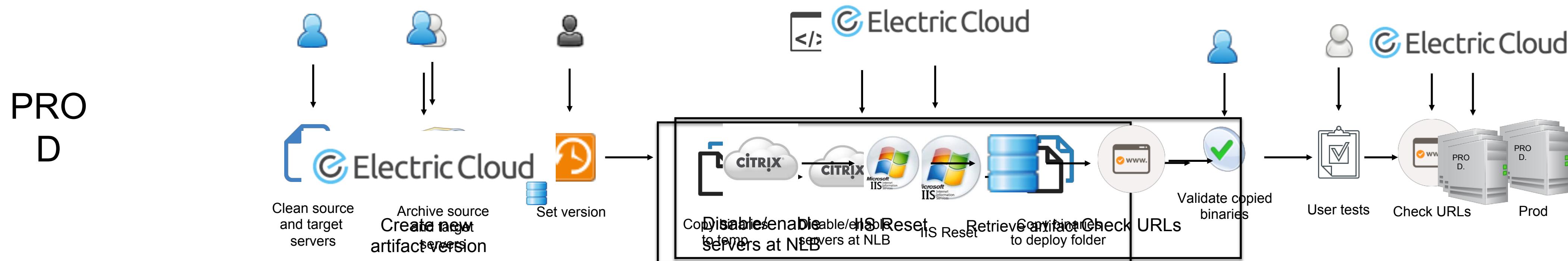
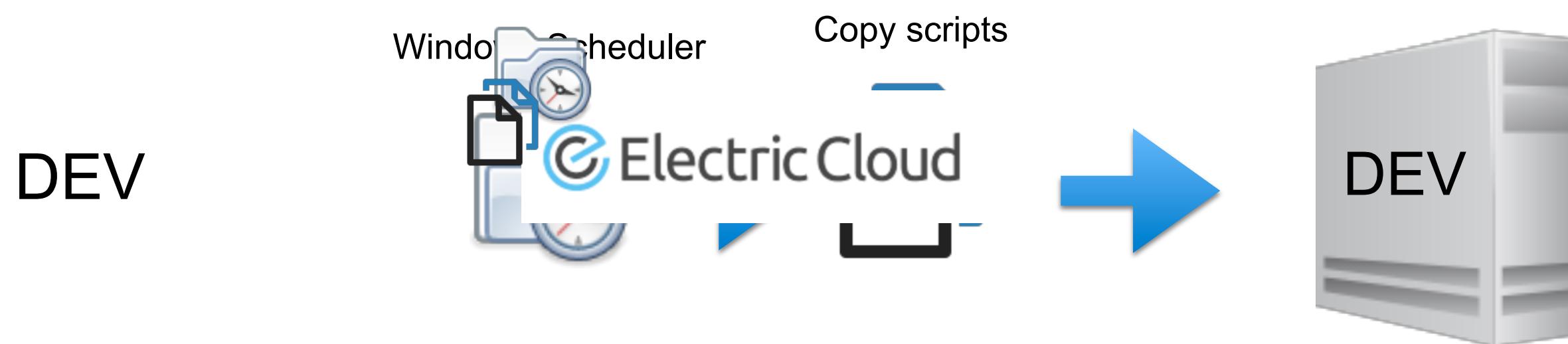
Defining Release Fundamentals

- 1 **What:** Application bill of materials
- 2 **Where:** Release assigned environments
- 3 **How:** Pipeline + application inputs
- 4 **When:** Schedule and pipeline gates
- 5 **Who:** Approvers + task assignees

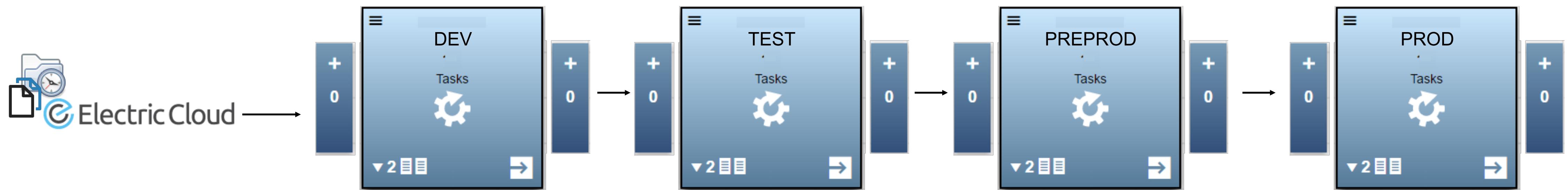
Previous Deployment Process



New Deployment Process



Continuous Delivery Pipeline



TFS Build



FitNesse



TFS Build



Custom Apps & Scripts



Code Quality



Selenium Test



Custom Apps & Scripts



Custom Apps & Scripts



Jenkins



Custom Apps & Scripts



NLB



IIS

Additional Deployment Capabilities

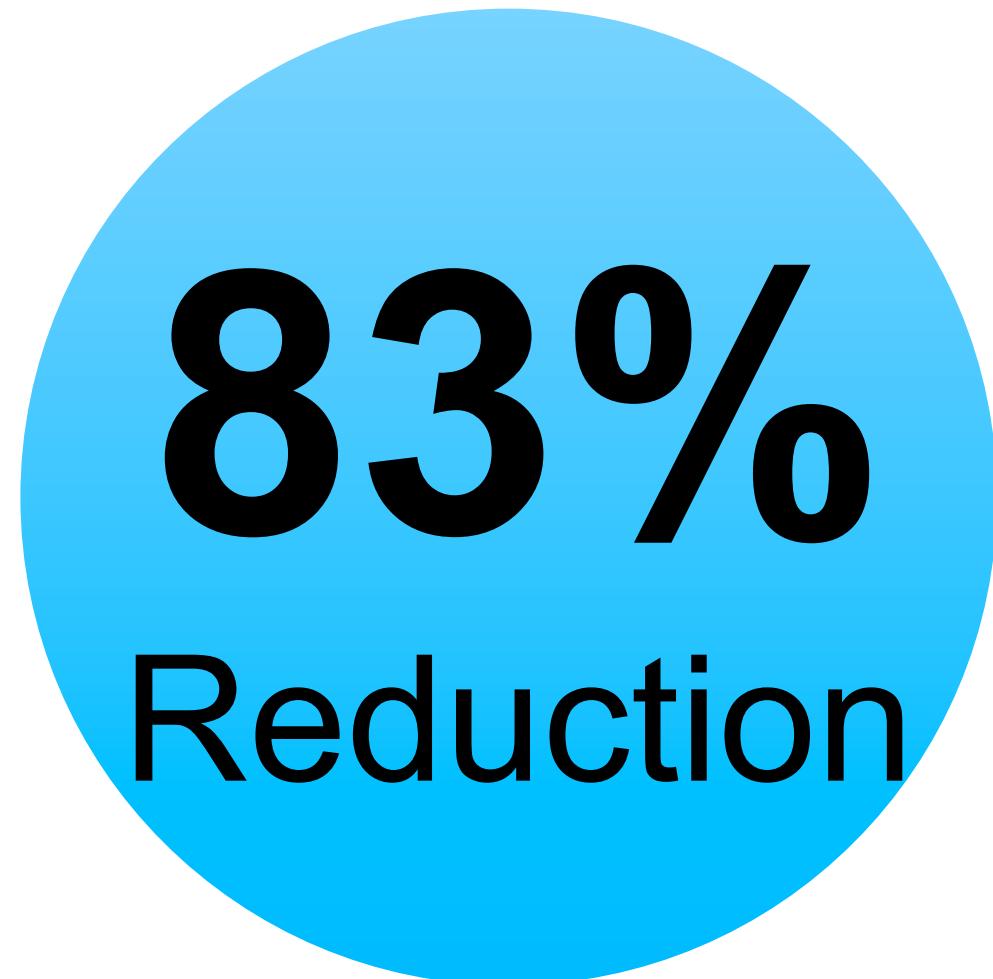
Orchestratio
n of Network
Transfers

Logging
Automation
Processes

Audit and
Reporting

Immediate Benefits

Savings for CI team



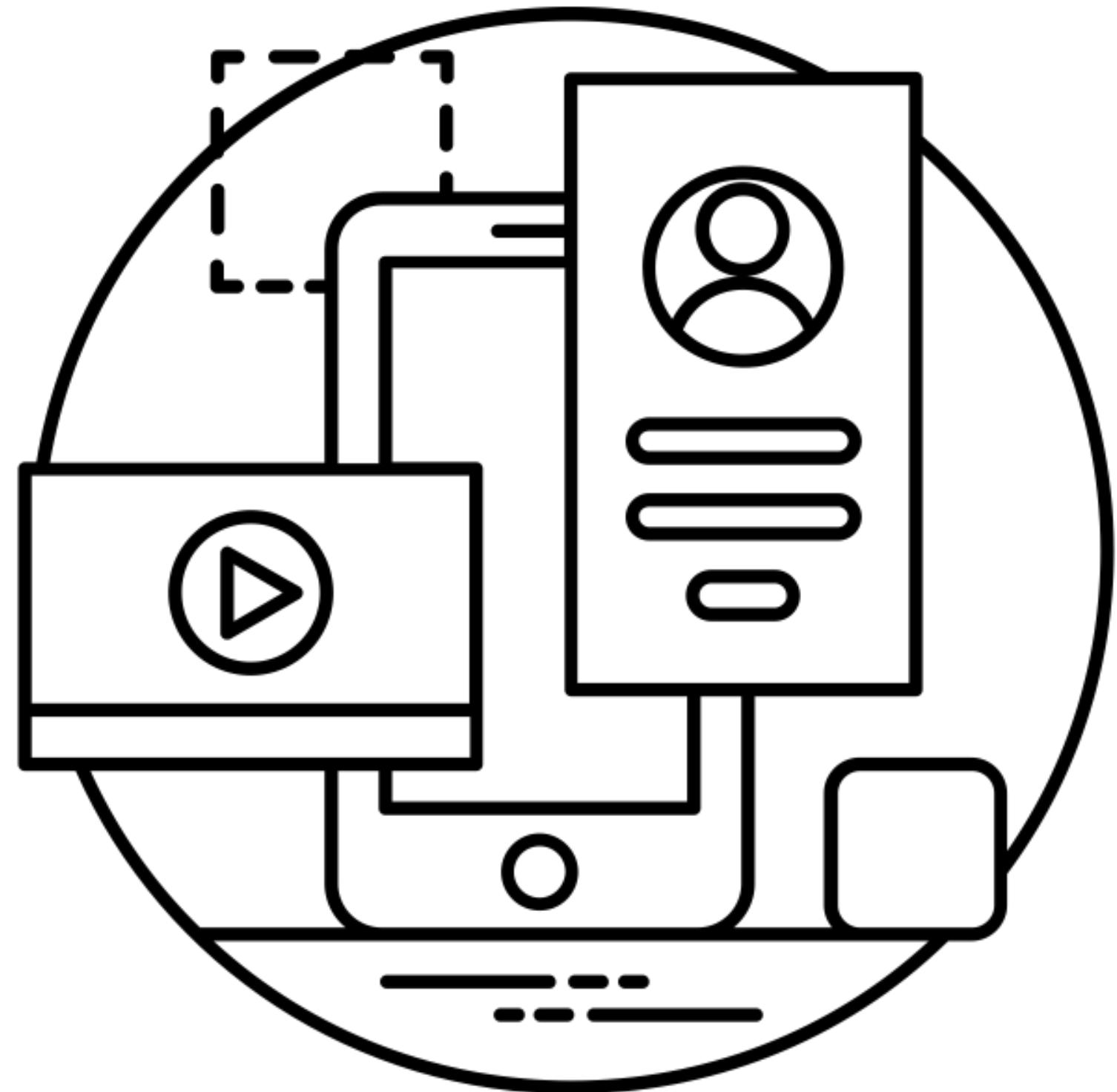
2 Hours to 20 Min
Through automation of
release artifact packaging

Savings for operations team



8 Hours to 30 Min
Through orchestration of
production release
processes

Additional Benefits



No Downtime!

“Deployment and infrastructure automation prevented performance degradation and outages during massive mobile banking spike!”

Audit Challenge



Banking Regulation and Supervision
Agency audits to ensure financial market
stability

- regulation
- supervision
- enforcement

Audit Challenge

- Separations of Duty Control
- Code Quality Control
- Unauthorized Access Control



Audit Challenge

- new banking regulations and audit requirements threaten to take time/energy and hinder ability to release software
- auditors want teams to understand the business risks and properly mitigate those risks.



Audit Solution

Deployment and Change History for All Objects

DB
OS
Environments
Artifacts
Configurations
Users and Access
Scripts

All code is validated through defined controls prior to production deployment

Unauthorized access is prevented, detected, and corrected

CAST runs static code analysis on each code check-in to validate the code conforms to the ruleset.

Audit Results

NEW PROCESS: CONTINUOUS AUDIT REPORTING

Before

- Days of reporting
- Partial reporting coverage
- Bottlenecked hot fixes



After

- **One click** reporting
- **100%** reporting coverage
- **No delay** in releases

Next Steps

2019 Roadmap

Project	Metric
Making EFlow DeFacto Standard for all IT Automations	Coverage percentage E-Flow tool integration in all environments
Microsoft - Desire State + EF Pipeline-as-code	Coverage percentage of the use of MS Desire State Configuration
Docker Container and Kubernetes Implementation	Percentage of Docker Container and Kubernetes implementation
Use and Distribution of Microsoft Azure Stack	Usage percentage of Microsoft Azure Stack
Test Automation Implementation - Devops – Eflow	Percentage of automated regression test coverage on all digital channels, BOA One and BOA Container

Q &

A

#DOES2018

agenda

introduction

our strategy

KT DevOps implementation

next steps

Introduction



