Development & DevOps Environment Transformation

Development of a CICD life cycle involving cloud and micro-services with DevOps Orchestration Tool

CONTEXT

CLIENT

- A global technology company

KEY DRIVER

- Ease the activities of building environments and managing releases

- Setup the DevOps orchestration environment for continuous development/integration of multiple products in the organization

- Operation dashboard of environment, service, release, and tools

CHALLENGES TO BE ADDRESSED

- Longer time and higher effort in building quality environments and composing relevant services for releases due to the multiplicity & complexity of scripts & configurations

- Duplication of tasks and higher potential of errors as the teams are operating in silos and building multiple one-off solutions

- User dissatisfaction due to delayed release of product features or not meeting the planned product release schedules

SOLUTION – OUR ROLE

End-to-end responsibility that includes conceptualizing a self-organizing development process, portal design, system architecture and development

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Leveraged our deep understanding & experience of cloud, modern DevOps practices, micro-services, and CI/CD orchestration tools

SOLUTION – APPROACH & KEY CONSIDERATIONS

COMMON TOOL FOR ALL PRODUCTS & TEAMS

A user-friendly web application and scripts accessible by all teams to manage deployed applications, environments, releases, and services

PROCESS STANDARDIZATION & SIMPLIFICATION

A standardized process that support the day-to-day process of teams to simplify their activities across the development life cycle

TEMPLATE-DRIVEN & REUSABILITY

A framework that leverages the constructs of orchestration through scripting, configurable keys, and composition techniques

EXTENSIBILITY & CLOUD AGNOSTIC

A design mechanism that can be easily extended for a micro-services based application to support leading cloud providers

SOLUTION MODULES – KEY INFO

DEPLOYED DASHBOARD

Environments	Applications
Services	Code Repository Links
Documentation Links	API Doc/Portal Links

ENVIRONMENT MANAGER

Products → Environments → Blue/Green → Templates

Profiles → Secure Key Storage & Management

SERVICE MANAGER

Services Port Mapping

Services Count Mapping for an environment

RELEASE MANAGER

Products → Releases (versions)
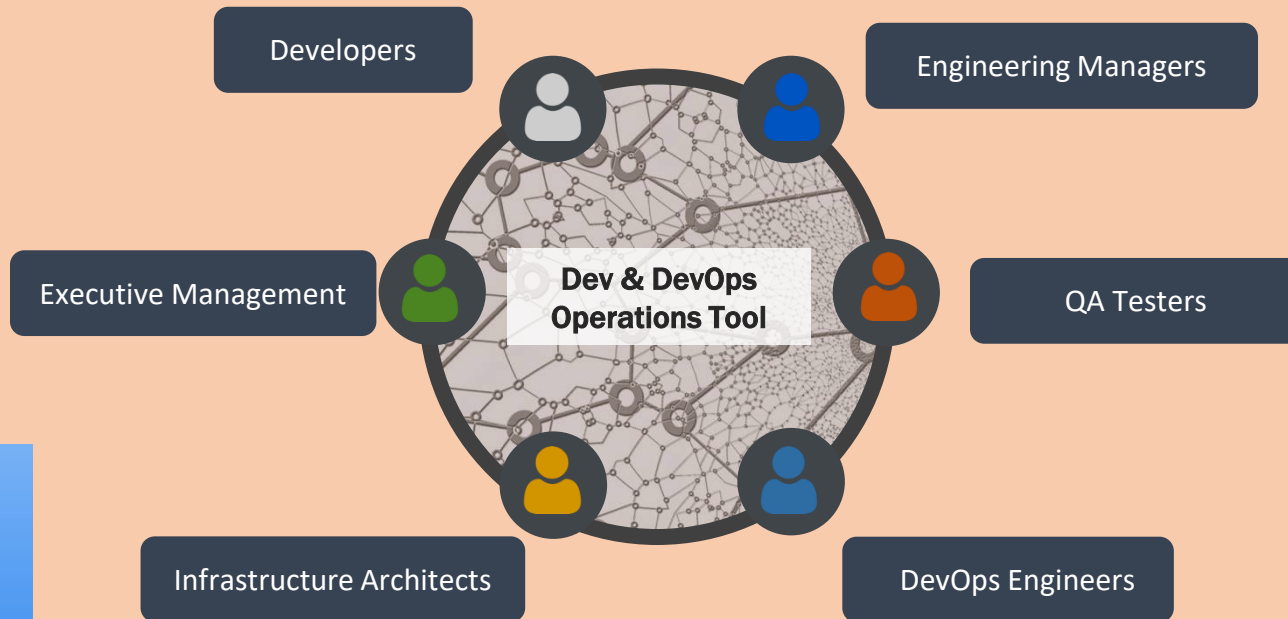
Releases → Services (versions)

DEPLOYMENT TOOL

Deployment-Runs and Status

Terraform Details

Deployment History

SOLUTION – PARTICIPANTS & KEY TECHNOLOGIES

A common solution that helps all involved in the Continuous Development & Integration

Developers

Engineering Managers

Executive Management

Dev & DevOps Operations Tool

QA Testers

Infrastructure Architects

DevOps Engineers

KEY TOOLS & TECHNOLOGIES

Languages	**UI Framework**
TypeScript, JavaScript	Angular
Micro-Service	**Orchestration**
NodeJS	Terraform
Deployment Cloud	**Data Store**
AWS (extendible to other cloud providers)	MongoDB

RESULTS – KEY BENEFITS

ELIMINATED SILOS & DUPLICATION

By providing a common tool for all participants with a framework that enables high re-usability

REDUCED TIME & EFFORT

By removing the need to build one-off tools and by providing configurable templates for all Dev & DevOps activities

INCREASED TEAM SATISFACTION

By reducing problems, ensuring that the tool mimics the day-to-day activities of the teams, and accelerating releases

CHAINYARD

RELEASE TIME

HOURS TO MINUTES

RELEASE CYCLE

BI-WEEKLY TO DAILY

CHAINYARD

THANK YOU

DevOps & Cloud