

# ORAN: Continuous Deployment and Testing

Amdocs Network Services



# Agenda

- 1 Introduction
- 2 Continuous Deployment & Testing
- 3 Demo
- 4 Recommendation



# Amdocs helps you amaze

## Proven pedigree

- 25+ years of delivering end-to-end agile services in the RAN
- Significant investment in network services
- 150+ customers
- 4 global delivery centers

## Industry contribution

- 5G Experience lab
- O-RAN alliance
- Telecom infra project (TIP)
- OnGo alliance
- ONAP

## Software DNA

- Open tools and processes
- Growing partner ecosystem

**We unlock our customers' innovative potential, empowering them to transform their boldest ideas into reality and make it amazing**

# What we do

Quali platforms **automate and orchestrate infrastructure** at scale

Automation **DNA, trusted advisors and partners** to our customers

**Streamline** infrastructure **complexity**  
Provide **safe and productive** access to **programmable infrastructure**

**Eliminate friction** for users  
Implement **seamless governance** with **full visibility** and **control**

**Diversity, Equality and Inclusion**

Quali

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TRUSTED BY CUSTOMERS WORLDWIDE

4 OF THE TOP CLOUD PROVIDERS



TOP CLOUD SERVICES AND GLOBAL CARRIERS



FINANCIAL SERVICES



TECHNOLOGY LEADERS AND MORE



# CD/CT: Platform Architecture

 **Workflow Engine** (Process Automation) **4**

**1**  
**NetONE**  
(Image and  
Artifact Sanity)

**2**  
**Quali**  
(Continuous Deployment)  
Business Intelligence  
Network Inventory  
Job Scheduler

**Jira**  
(Project/Defect  
Management)

**3**  
**NetONE**  
(Continuous Testing)  
Configuration  
Test Result  
and Reports

**Test Tools  
and  
Application(s)**

GitHub  
Jenkins

Cloud



**1** Artifacts screening,  
integrity check

**2** Instantiation, activation  
and configuration

**3** Comprehensive  
Testing  
and Automated Execution

**4** Tagging and  
releasing vendor  
artifacts

# CD/CT: Workflow : Key Drivers



## Stage 1

**Check and certify** vendor artifacts  
appliance, image, config, packages, libraries, .jar, etc



## Stage 2

**orchestrates, instantiates, and configures** VNFs, CNFs, and PNFs in the topology. Update and Upgrade of Network Resources.



## Stage 3

**Configuration and validation**  
Functional, System, Protocol, Interoperability, Perf, Scalability, etc



## Stage 4

**Process correlated logs**, consolidate test reports, upload certified & verified artifacts, charts, configuration, etc. to respective repositories. Send notifications



## Stage 5

**Network Upgrade** through SMO platform



## Stage 6

Selective **Production Testing** to Verify the changes and operationalize the network & services



- The **workflow is segmented** into multiple stages
- Major **failure at any stage** leads build failure
- Workflow can be **configured to ignore** 'acceptable' error/failure
- **Queuing** by availability / scheduling / reservation engine for better utilization
- **Continuous validation** & improvements
- System to Network Resource **Integrated Test platform**
- 24/7 Remote collaboration w/ **sandbox environment**

# Continuous Deployment & Testing : Triggers

## Scheduled Build

Nightly (or as configured) build



1

## Configuration Updates

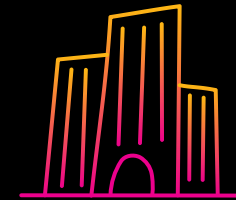
Updates to PNF, VNF, CNF, Configuration



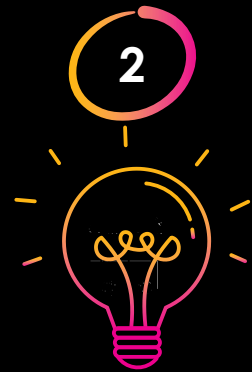
3

## Topology Change

Change in network topology (Blueprint)



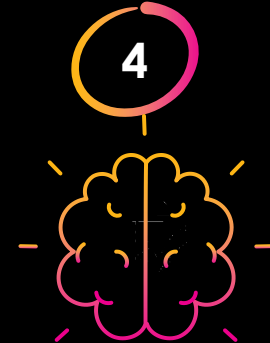
5



2

## Vendor Artifact Updates

New updates from VNF/CNF Vendors



4

## Updated Test Cases

Updates to Test Cases

6



## On-demand

Execute on need basis



- ❖ These are some of the off the shelf built-in triggers
- ❖ Simple to add customized triggers

# DEMO

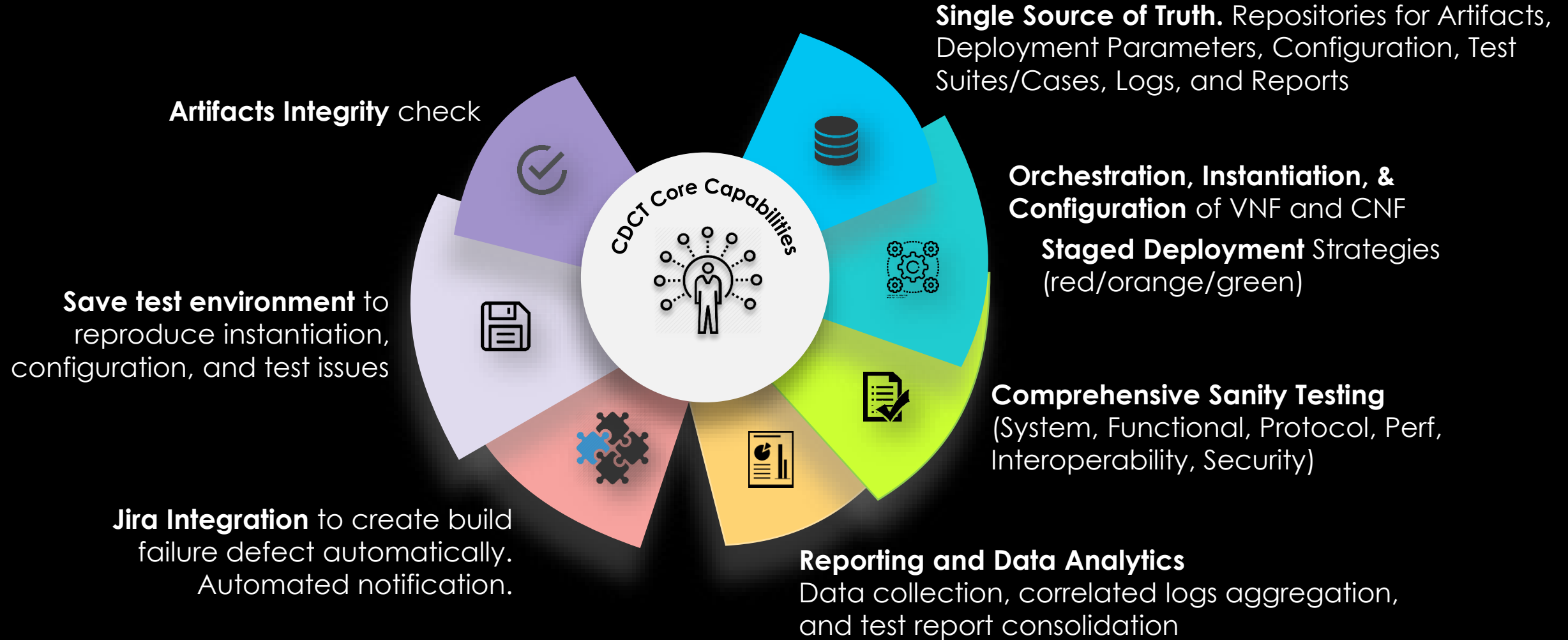
### Continuous Deployment

The screenshot displays the AWS CodePipeline console interface. It shows a pipeline named 'Continuous Deployment' with four stages: Source, Build, Test, and Deploy. The 'Deploy' stage is currently active, showing a list of deployment jobs. The 'make it amazing' logo is visible in the bottom right corner of the screenshot.





# Continuous Deployment & Testing Core Capabilities



# Recommendations

- 1 Collaborate with **ORAN partners** providing Open RAN Element Management Function, to enrich **the continuous testing**
- 2 Amdocs is open to **collaborate with ORAN RIC** to do integration to **Amdocs CD/CT**
- 3 Collaborate with Open RAN vendors for operationalize the Software deployment and upgrade with **continuous deployment**
- 4 Bring **added value** to address existing/**new use cases of xApps/rApps**



Let's  
**make it**  
**amazing**

