CONTINUOUS DELIVERY WITH EFFICIENT AUTOMATED TESTING IN CLOUD

Presented by [Teresa Song]
Agenda

- Product Introduction
- Challenge & Solution
Product Intro – IOT PLATFORM

**Ericsson IOT Applications Marketplace**

- Ericsson Apps
- Customer Apps
- Partners Apps

**IoT Platform**

- Device Registry
- Device Management
- M2M Data Management
- Network and Device Adaptation
- Device Authentication
- Data Encryption
- App SDK
- Real-Time Rule Execution

**Device**

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Test Strategy

Deployment Platform

Physical Server

Virtualization
- KVM
- VMWare

Openstack

Support Multi-Cloud
- Openstack
- ECC
- AWS
- Docker

PER CHECK-IN
- Unit Test
- Component Test
- High Priority Function Test

DAILY
- All Function Test >98%

PER SPRINT
- Performance Test
- Stability Test

PER RELEASE
- Manual FT <2%
- Upgrade Test
- Document Test
- RBT

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Challenge & Solution

Extract foundation modules as image

- > 98% automation rate
- CI with sufficient test

Good

Challenge

- Jenkins job, Longest > 2 hours
- 10,000+ test scripts more and more

Introduce new CI framework
Extract Foundation Image

- Check-in
- UT/CT is pass?
  - Pass
  - FT/NFT is pass?
    - Pass
      - Ready for Customer
    - Fail
      - Send feedback
- Fail
  - Send feedback

Reduced, 38 Min 30%

Hierarchical images are used here

Image with component A+B

Sold by Value Package

Customer

Hierarchical images are used here

Image with component A+B

Customer

Build A
Build B
Build C
Build D

Image AB
Image Repo

Reduced, 38 Min 30%

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Challenge & Solution

Extract foundation modules as image

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Introduce new CI framework

- Jenkins job, Longest > 2 hours
- 10,000+ test scripts more and more

Good

Challenge
Test CI Framework

Support Image Launch

- Jenkins
  - Test Job
  - Dispatch Slave
  - Resource Helper
  - CI Script Frontend
  - Exclusive Slave
    - CI Script
      - Invoker
      - Default Action
      - Library

- Artifactory
- GIT Repo

- Customized JClouds Plugin

- OpenStack
  - glance
    - Image Interface
      - Default Image
      - Component Image
    - create image
    - Upload image
    - delete image

- nova
  - Server Interface
    - create server
    - delete server
    - Slave instance
    - Dispatcher Slave
    - Exclusive Slave

- Reference
- Call Flow

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Unified CI API
Smart Execute Test

- Invoker Layer
  - Jenkins job invoke Core script in CI invoker bring job’s configuration as input parameter
  - Core script combine Job’s input and default configure to action invoke list
- Invoke action by list
- Action Layer
  - Associate library script for default action
  - invoke hook before and after action perform
- Library Layer
  Provide basic API
Example

Invoke Layer
- Core
- Master
- Function
- deploy
- verify
- appserver : occas
- Installation : m2m
- testInit : m2m
- functiontest: m2m

Use to Locate branch or folder

Action List

Action List
- function/ (ft/smoketest/upgrade)
  - deploy
    - network.py
    - appserver.py
      - class occas
      - class jboss
    - installation.py
      - class m2m
      - class messaging
  - verify
    - testInit.py
      - class common
    - functiontest.py
      - class common
      - class m2m
      - class messaging

Hook List
- function
  - deploy
    - installation.py
      - class m2m-pre
      - class m2m-post

Use common when not find

Library Layer

Library
- DbExecution
  - performMySQL.py
  - performOracle.py
- getComponent
  - getRpmFromRepo.py
  - getWarFromRepo.py
- deployRPM
  - installRPM.py
  - installWar.py
- activeComponent
  - activeOccas.py
  - activeJboss.py

Action Layer

Dispatch Slave
- Resource Helper
- CI Script Frontend

Exclusive Slave
- CI Script
- Default Action
- Library
Challenge & Solution

- Extract foundation modules as image
- Average 38 minutes/30% are saved for each Jenkins test job
- Time to Error Discovery is much shorten
- Easy and flexible to support testing on future multi-cloud platform

Introduce new CI framework
Changing On The Way

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Virtualization
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- VMWare

Openstack

Support Multi-Cloud
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Deployed Platform

Q & A

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