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Development Operations in the Cloud:

A Use Case and Best Practices

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Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Program Agenda

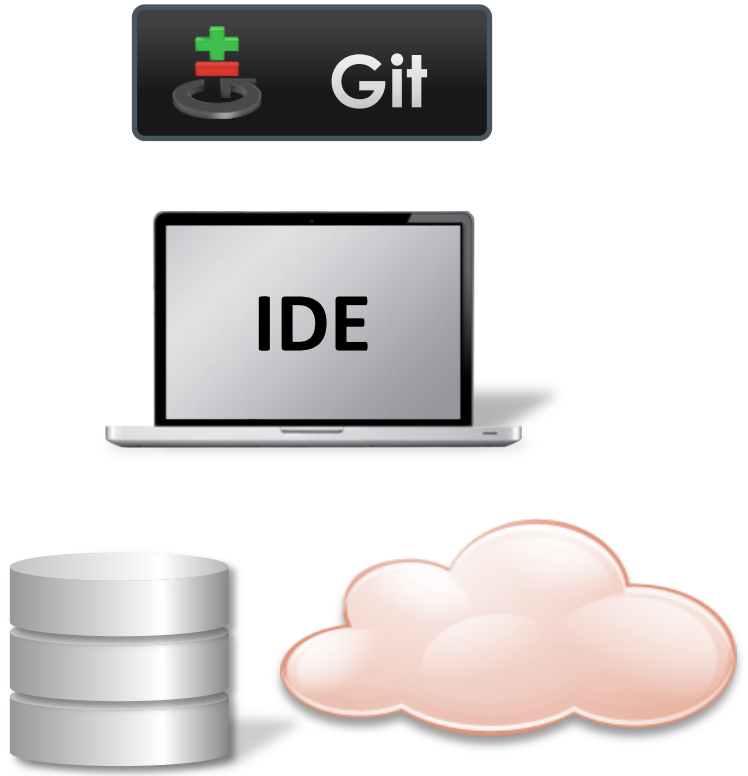
1. Challenges Facing Development Organizations
2. Oracle Cloud Ecosystem
3. Case Study: TGI-NET
4. Case Study: A Day in the Life of a Cloud Developer
5. Q&A

Why Move to the Cloud?

Better applications
developed faster
cheaper

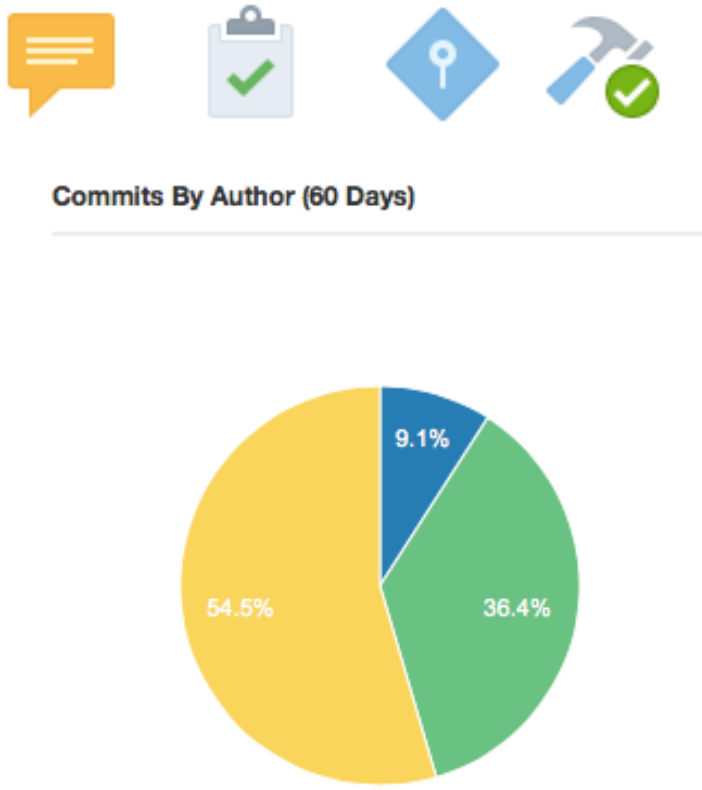
Development Organization Challenges - Costs

- Acquire hardware and software
- Setup and install components
- Connect components
- Configure IDEs
- Maintain and upgrade versions
- Connect to deployment platform

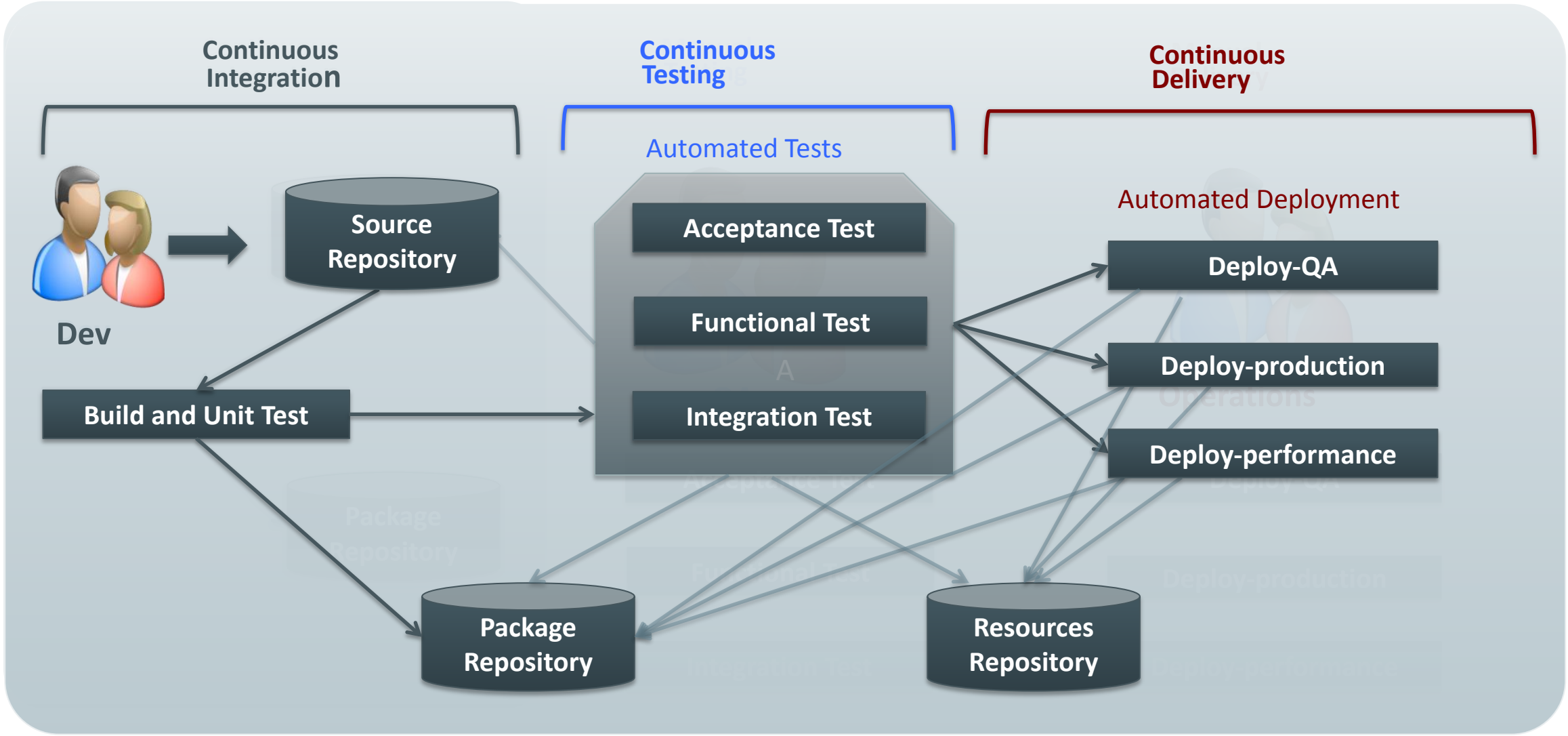


Development Organization Challenges - Process

- Achieving build process agility
- Producing better applications
- Streamlining deployment
- Managing teams and developers
  - Tracking and reporting
  - Team communication
  - Workload management and prioritization



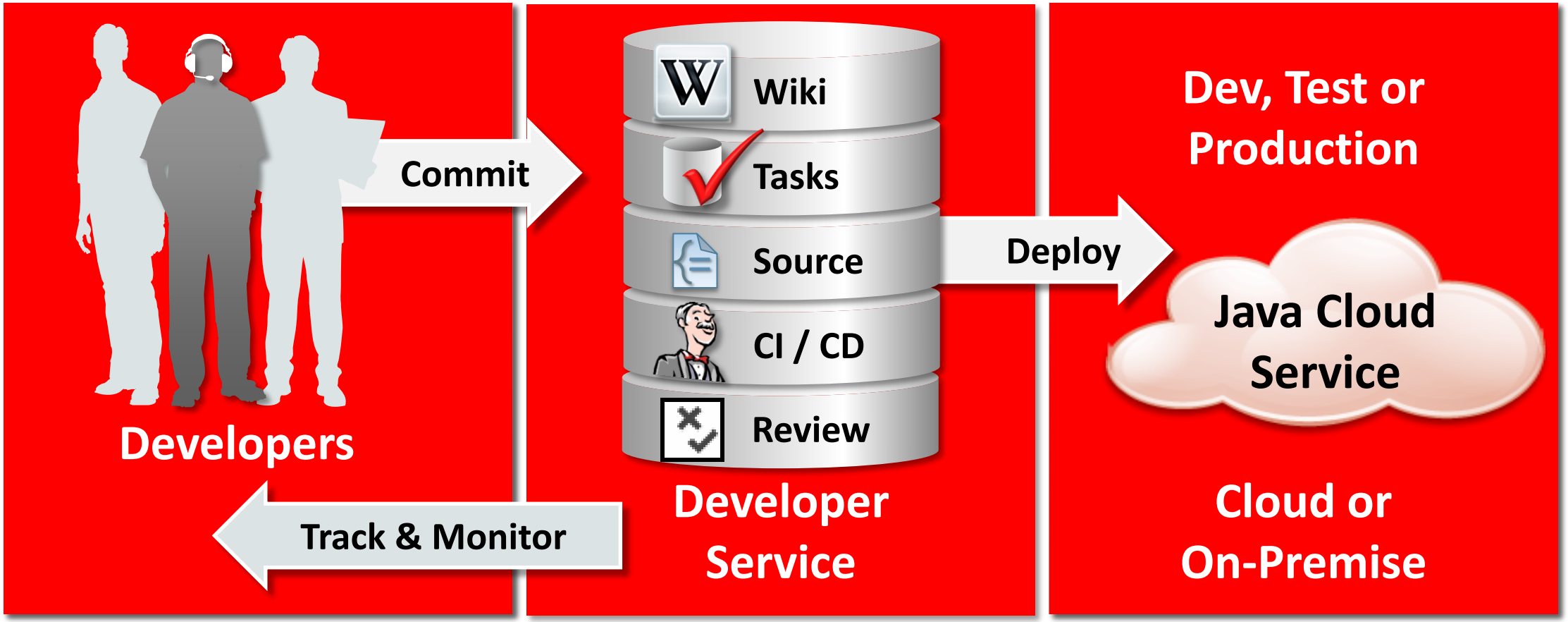
Modern DevOps



The Ideal Solution

- Integrated ALM components
- Quick startup time and easy provisioning
- Minimal maintenance costs
- Informative tracking of development activities
- Seamless deployment
- Flexible Cloud or on-premise

Developer Cloud Service: Bringing it All Together



Developer Cloud Service: What It Is

- Development Platform provided as a Service
- Application Lifecycle Management
- Team Management

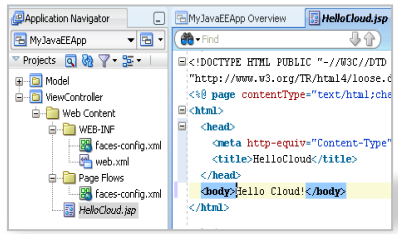
Source Control Management

Issue Tracking

Hudson Continuous Integration

Wiki Collaboration

Developer Cloud Service - Interfaces



JDeveloper, NetBeans and Eclipse

Web Dashboard

REST Interface

SSH to GIT

Mylyn

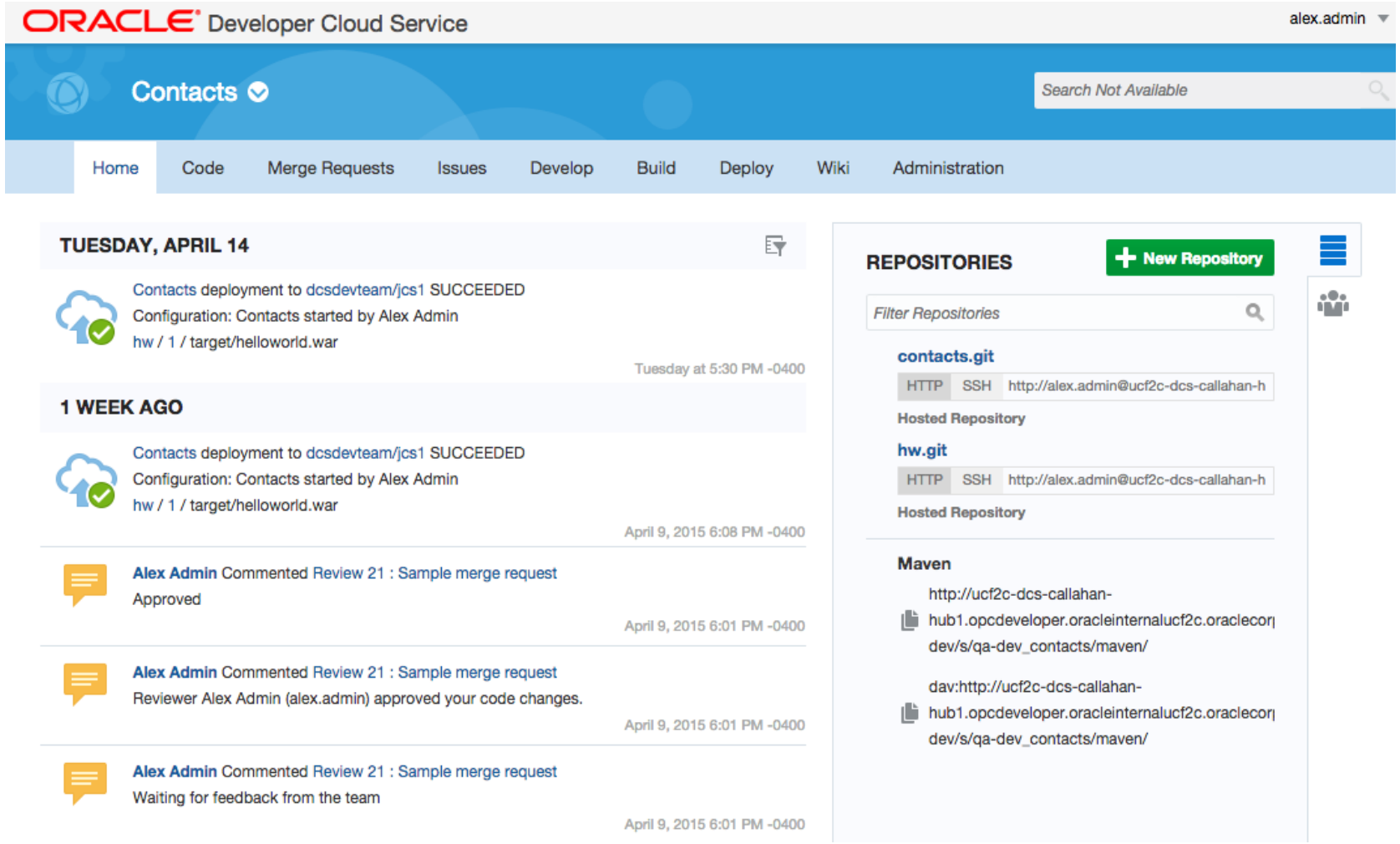
Mylyn

Partners

Developer Cloud Service

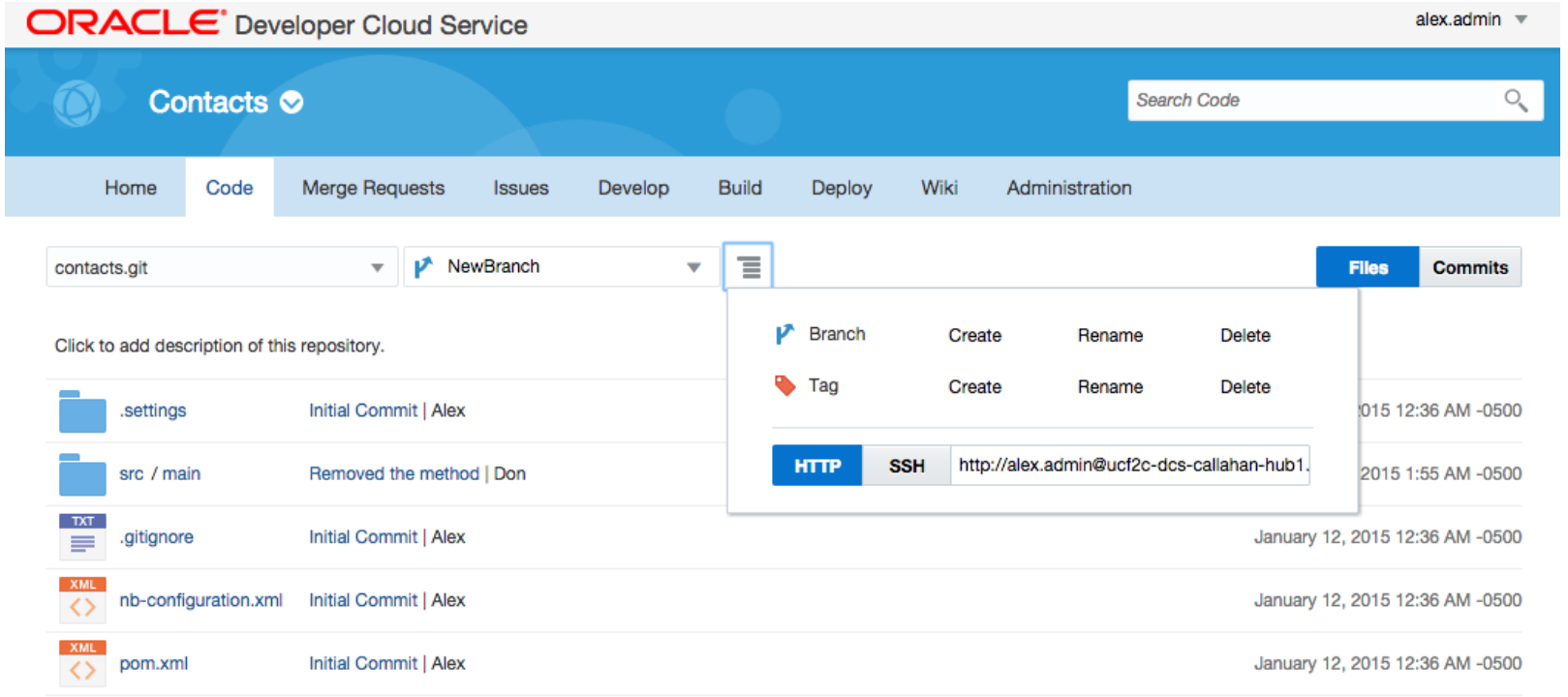
Manage Your Projects

- Activity Stream
- Git Repositories
- Maven Repository
- Team Members



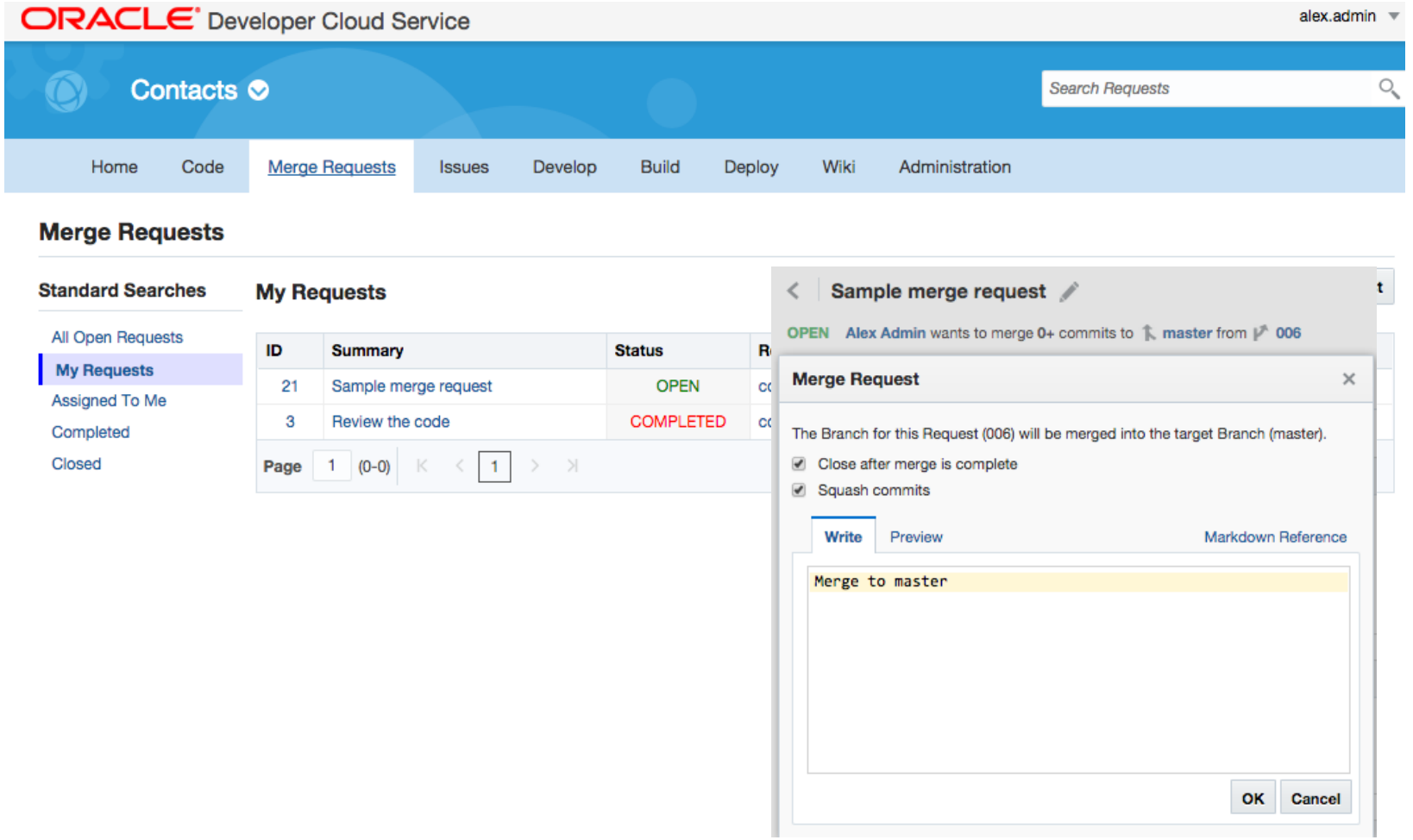
Version Your Code With Git

- Automatically provisioned
- Connect from any IDE
- Command line accessible
- Integrate with GitHub



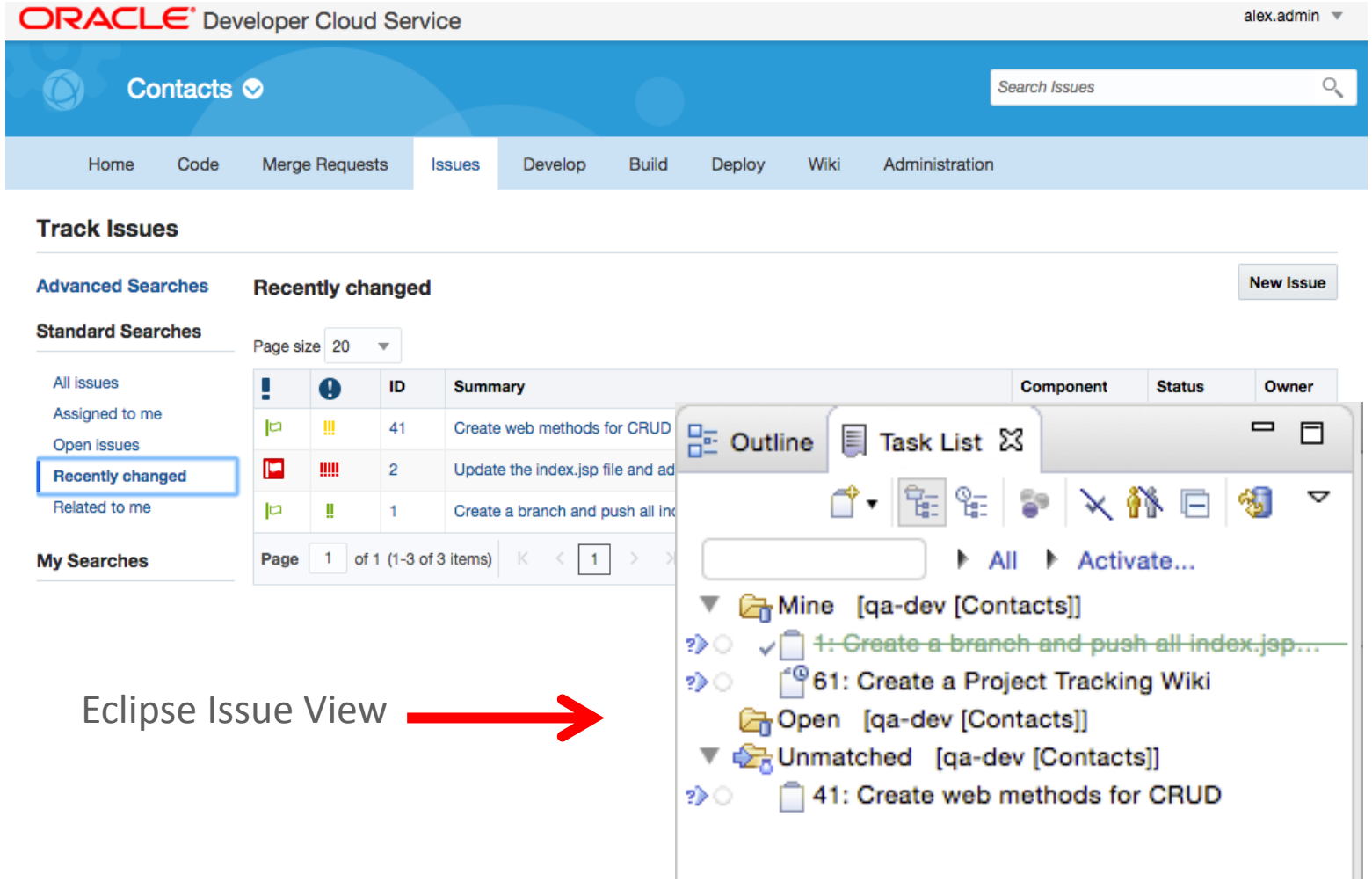
Review Peers Code

- Create Code Reviews
- Invite Team Members
- Collaborate on Reviews
- Accept / Reject / Iterate Reviews
- Comment on Code
- Merge Code
- Merge Conflict Resolution



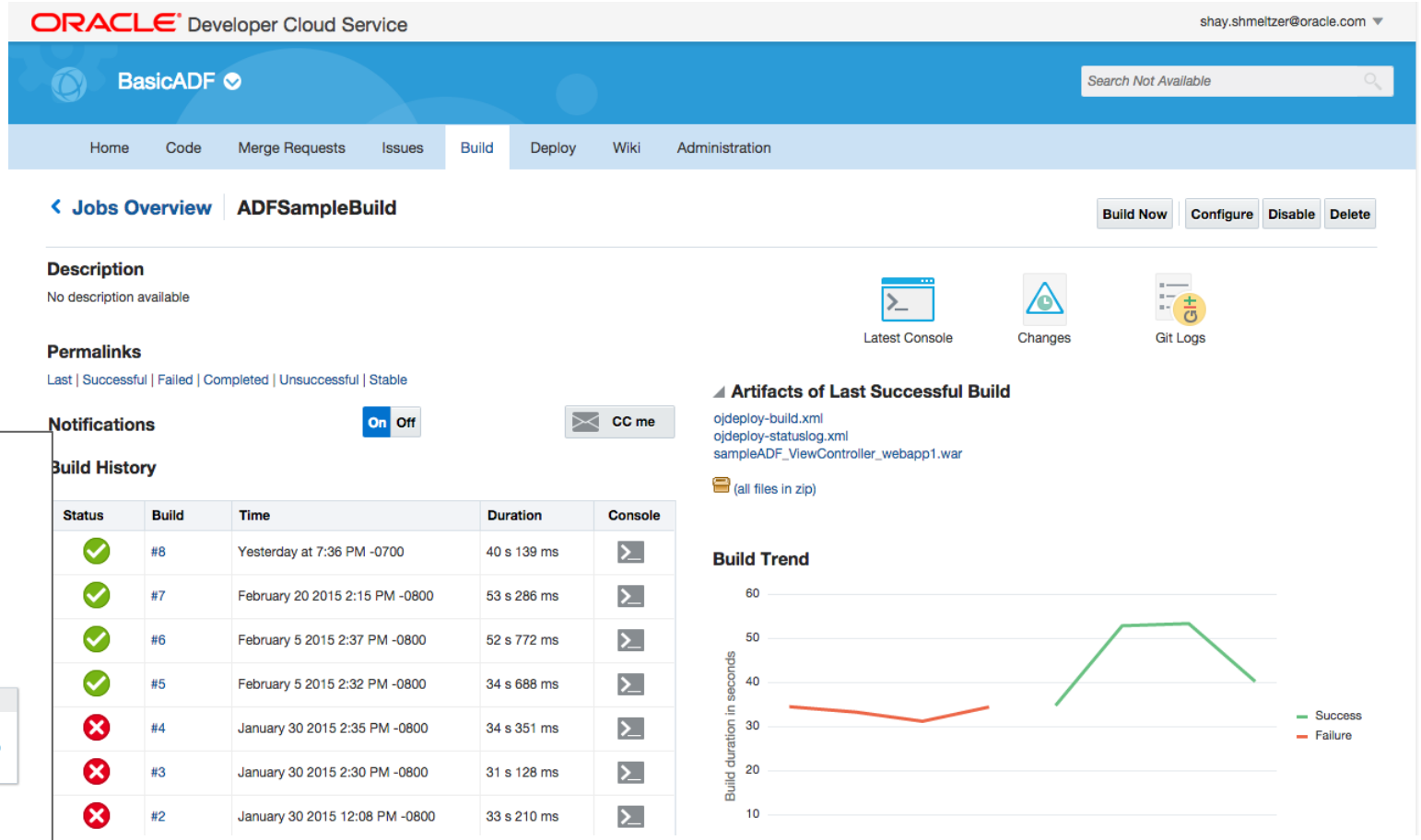
Track Project Issues

- Track Requirements/Bugs/ERs
- Assign to team members
- Integration with MyLyn in IDEs



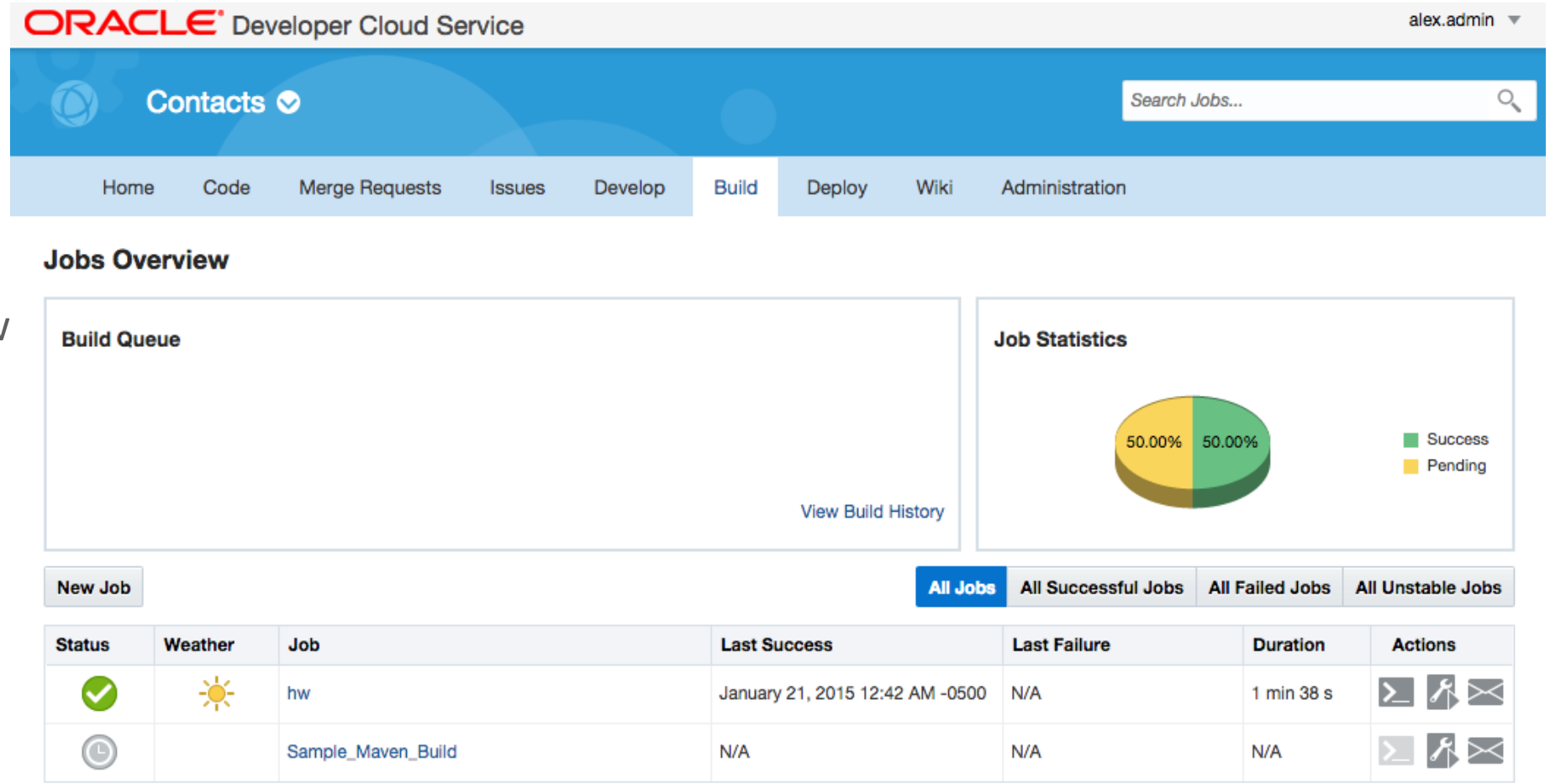
Automate Project Builds

- Maven
- Ant
- Gradle
- Event based automation



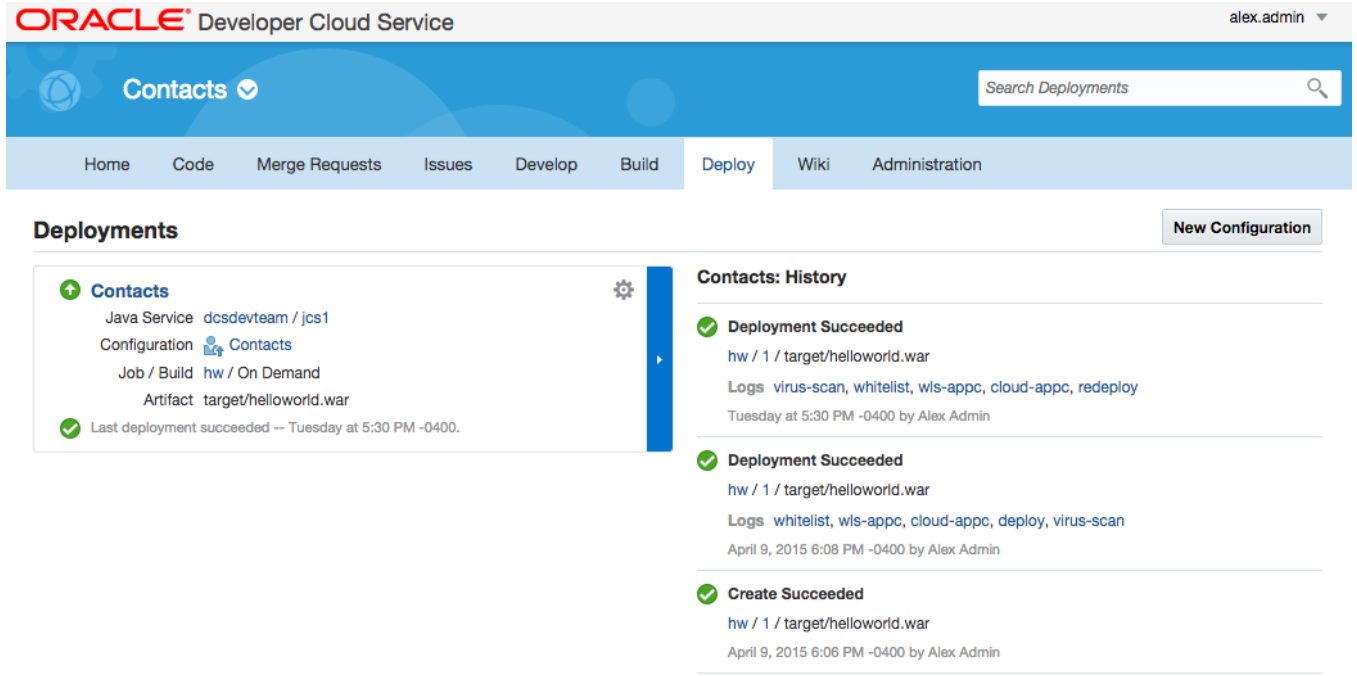
Continuous Integration / Continuous Delivery

- Build status by job
- Create new jobs
- View build history
- Save views
- Executor active view



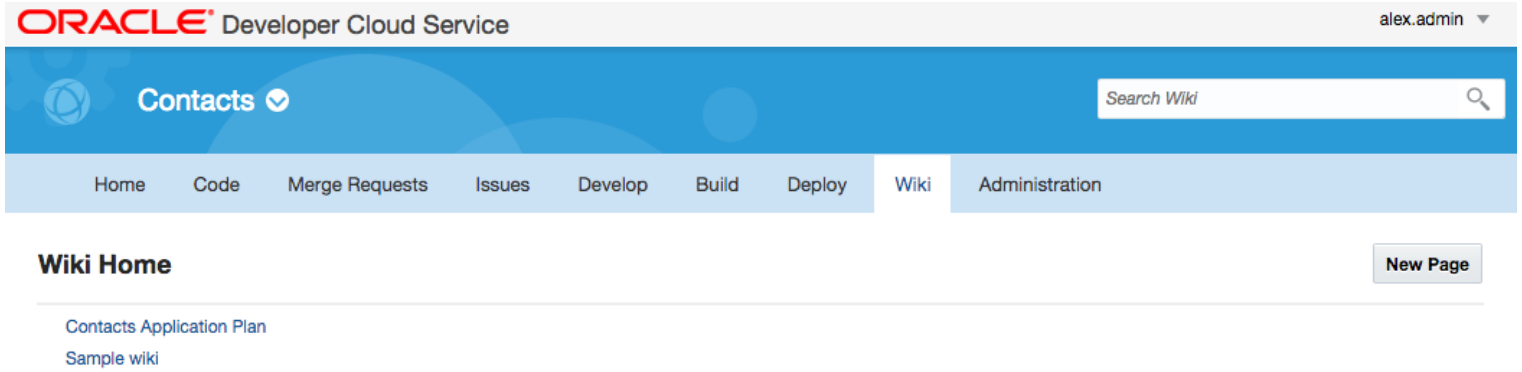
Simplified Application Deployment

- Create deployment configurations
- Start/Stop a deployment
- Redeploy/Un-deploy applications
- In the cloud or on-premise deployment



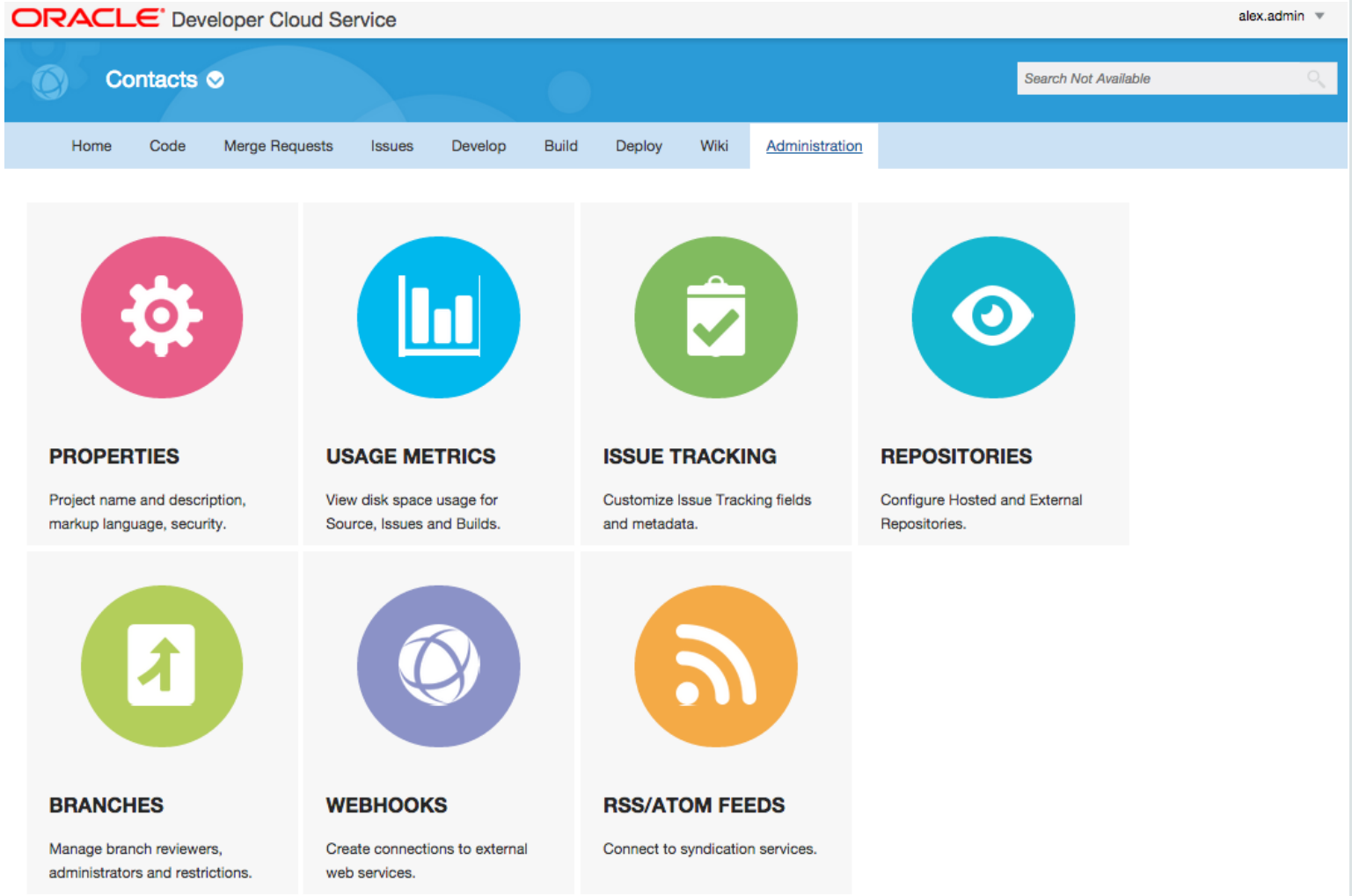
Share Information Through Wikis

- Create a new project wiki
- Collaboration through project specific wiki
- Content management
- Wiki markup of choice



Administer Your Projects

- Manage Project Properties
- Analyze Usage Data
- Customize Issue Tracking
- Configure Git Repositories
  - Hosted & External
- Manage Branches
  - Administrators & Restrictions
- Create Connections to External Web Services
- Connect to Syndication Services



Developer Cloud Service

Simplify Development

- Automated Provisioned Env
- Preconfigured & Integrated
- Automated Builds & Deployments
- Web based administration

Collaborate & Manage

- Integrated team source repository
- Continuous integration with breakage notifications
- Task/Defect tracking with activity stream and notifications

Integrated With IDEs

- JDeveloper
- Eclipse
- NetBeans

Deploy Automatically

- Deploy into Java Cloud Service automatically
- Workflow ensures build & test

Developer Cloud Service

DEMO

Source Control Management

Issue Tracking

Continuous Integration

Wiki Collaboration

A Customer’s Use case and Best practice

TG Information Network Co.,Ltd. (Tokyo Gas Group)
Tatsuya Nakamura

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Safe Harbor Statement

This presentation is not an official announcement of
TGI-Net adopting Oracle Developer Cloud Service(DevCS).

We are currently investigating various cloud services for our enterprise system,
and DevCS is one part of our investigation.

The following contents are based on the investigation,
And are the composition of possibilities found through research.

Profile

- Tatsuya Nakamura
  - ✓ Systems Architect
  - ✓ Application Architecture Group, IT Architecture Planning Department
  - ✓ TG Information Network Co.,Ltd. (Tokyo Gas Group)
    - Tokyo Gas is a #1 largest city gas company in Japan.
    - Tokyo Gas has 11 Million customers.
- My role
  - ✓ Planning & designing of All Tokyo Gas system architecture & development as Systems Architect
    - ✓ Policy: “ High quality” and “easy to develop”
  - ✓ Research & Development of new Technology for Tokyo Gas
    - ✓ Cloud ,UI/UX and more…

Why we're looking at DevOps in the Cloud

Background

- New demands on energy industry
  - ✓ Retail liberalization of energy is coming within 2 years
  - ✓ More quickly deploy new attractive services
  - ✓ More quickly procure resources
- Old-fashioned dev methodologies still remain
  - ✓ Development on-premise with dev tools requiring manual set up
  - ✓ Developers often stick to old tools they get used to (SVN, etc)
  - ✓ Lots of manual work still remain

Need modernization!

Need more speed / less lead time

Need more apps for various services

Best practice concept

- Modernizing
  - ✓ Standardization on “modern” tools
- Continuous Integration
  - ✓ Build, Test, Deploy Automation through modern tools instead of a manual process, to reduce time, reduce manpower, and reduce failures
- Governance
  - ✓ Encourage developers to conform to the new standard
  - ✓ Easy to use is key factor for easy expansion

Oracle Developer Cloud Service

As a Solution for our issues

- Simply use DevOps solution in the Cloud
  - ✓ Easy to expand to all developers
  - ✓ Effective for reducing lead time as well as manpower
  - ✓ Nice for agile development
  - ✓ Don’t need operators
- Less initial cost
  - ✓ No acquisition of hardware
  - ✓ No acquisition or configuration of software

Oracle Developer Cloud Service

We tried setting up a complete development platform on-premise but it wasn't easy.

With Oracle Developer Cloud Service everything was pre-configured and available in minutes.

Target projects of DevCS

Where Developer Cloud is needed?

■Characteristic of development projects in TGI-Net

	Traditional style	New practice for Liberalization
Lead time	1 year or more	**Near-zero**
Dev period	Year(s)	**Month, or Weeks** (Continuous Delivery)

Developer Cloud is required in this area

- ☐DevOps Solution with less lead time
- ☐Agility and productivity of app development
- ☐Continuous Delivery

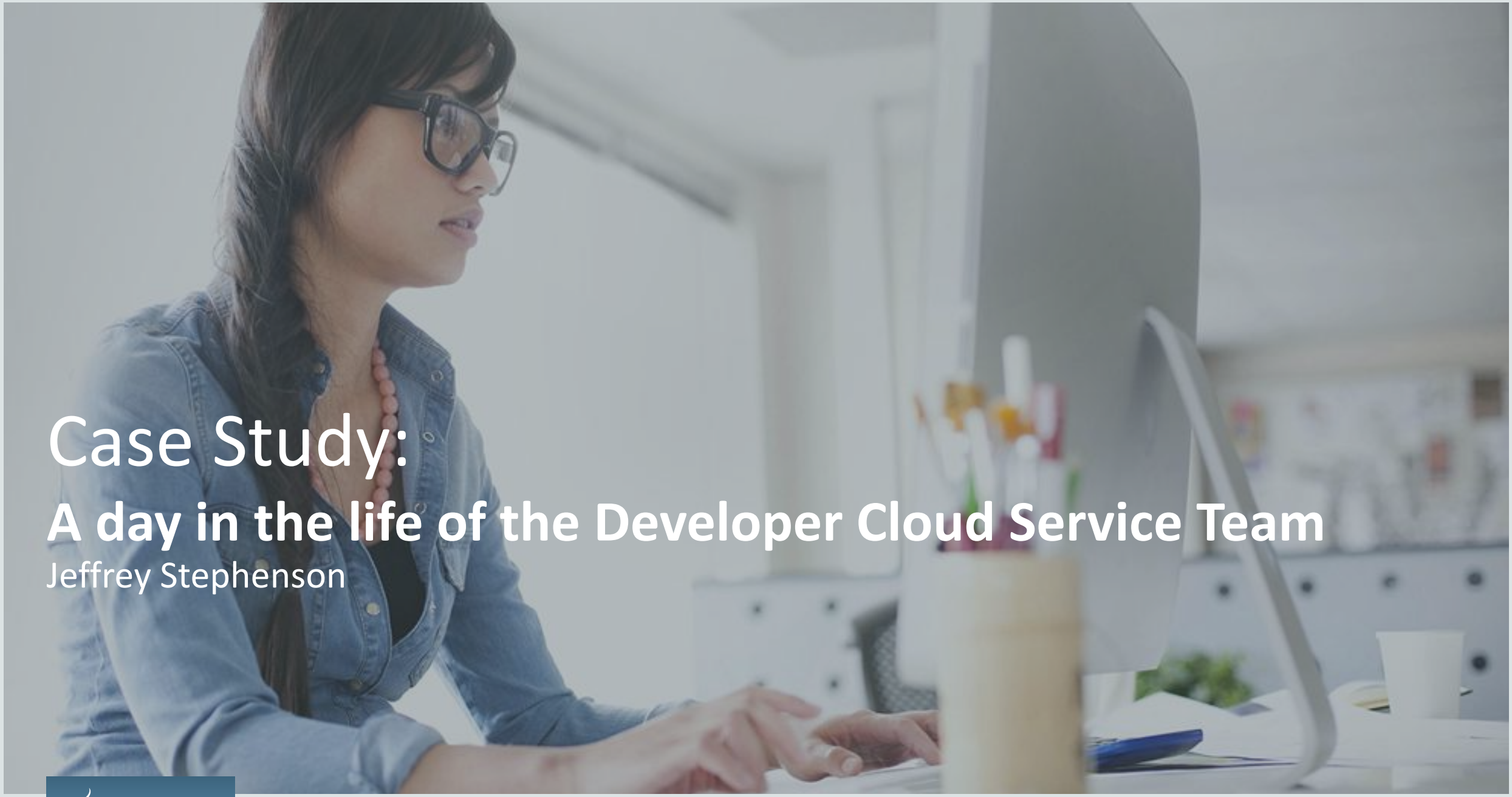
Wrap up

The latest development environment
for the enterprise in the Cloud!!

- **Environment provisioned in seconds with the latest DevOps tools**
- Don’t need operators. This is Oracle’s Service!
- Significantly reduce initial cost

Anyone can get
Modern DevOps environment with DevCS

Thank you!



Case Study:

A day in the life of the Developer Cloud Service Team

Jeffrey Stephenson

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Case Study: Developer Cloud Service Team

- Developer Cloud Service is developed on Developer Cloud Service
  - One Developer Cloud Service Project
  - 33 git repositories, 1 binary repository
  - 165 project members, 50 active contributors
  - 200 commits a week
  - 50 builds a day
  - 16555 issues
  - 200 wiki pages

Day In The Life of a Developer Service Developer

- Receives notifications of new/updated issues
- Queries open assigned issues in current sprint
- Creates a topic/feature branch for an issue
  - git checkout –b issue_16555
  - fix bug/implement new feature -- using IDE of choice – Eclipse, Netbeans, JDeveloper
  - git add –A (stages changed files)
  - git commit –m “Issue 16555: Implement new feature xxxx”
  - git push origin issue_16555
- Submits merge request for review
  - Notified of comments from reviewers – may need to push additional commits to branch
  - Notified of merge into target branch or rejection

Day In The Life of a Developer Service Developer (cont.)

- Merging Automatically Triggers Build
  - Builds code to produce new binaries
  - Runs unit tests
  - Deploys binaries to project maven repo
  - Developers are notified of build failures
- Twice daily scheduled build promotes latest successful builds to staging area
  - Failed deployment notifies developers
  - Successful deployment notifies QA team
  - QA verifies closed issue in staging area
  - Automatically triggers automated selenium testing

Day In The Life of a Developer Service Manager

- Issue management
  - Assign new issues into sprints
  - Track open issues in current sprint
- Merge requests
  - Review merge requests
- Promote releases from staging area to production
  - Create release branches
  - Use “Protected Branches” feature to lock release branches to avoid unapproved merges
  - Trigger build job to deploy release branch to pre-production staging area
  - Automatically runs automated test suite against pre-production area
  - Trigger build job to promote to production deployment
- I read the activity stream at the end of every day to review the day’s activities

Day In The Life of a Developer Service Manager (cont.)

- Monitoring
  - Oracle Enterprise Manager agents on VMs
  - Elastic Search/Logstash/Kibana centralized log management and analysis
  - But we also have build jobs that continuously run automated tests against the live service
- Working with partners/contractors
  - Create a separate project – add the partner/contractor to the team for that project
  - Spin up new VMs to serve as a staging area for projects
  - Monitor the partner/contractor's activity to ensure progress is being made
  - Remove access at the end of the engagement, keep the fully working development environment
  - Totally self-service – requires no IT guys, no access to company intranet

Summary: Benefits of Cloud Hosted Development

- Self Service
  - Spin up new projects in a minute
  - No IT team, no hardware to purchase and manage
  - Securely access from anywhere -- how secure are your on premise tools?
- Track Everything in one system!
  - Commit history
  - Merge request history
  - Build history
  - Deployment history
  - Issue history
  - Activity Stream
- Scales elastically – spin up as many staging environments as you need, pay for what you use

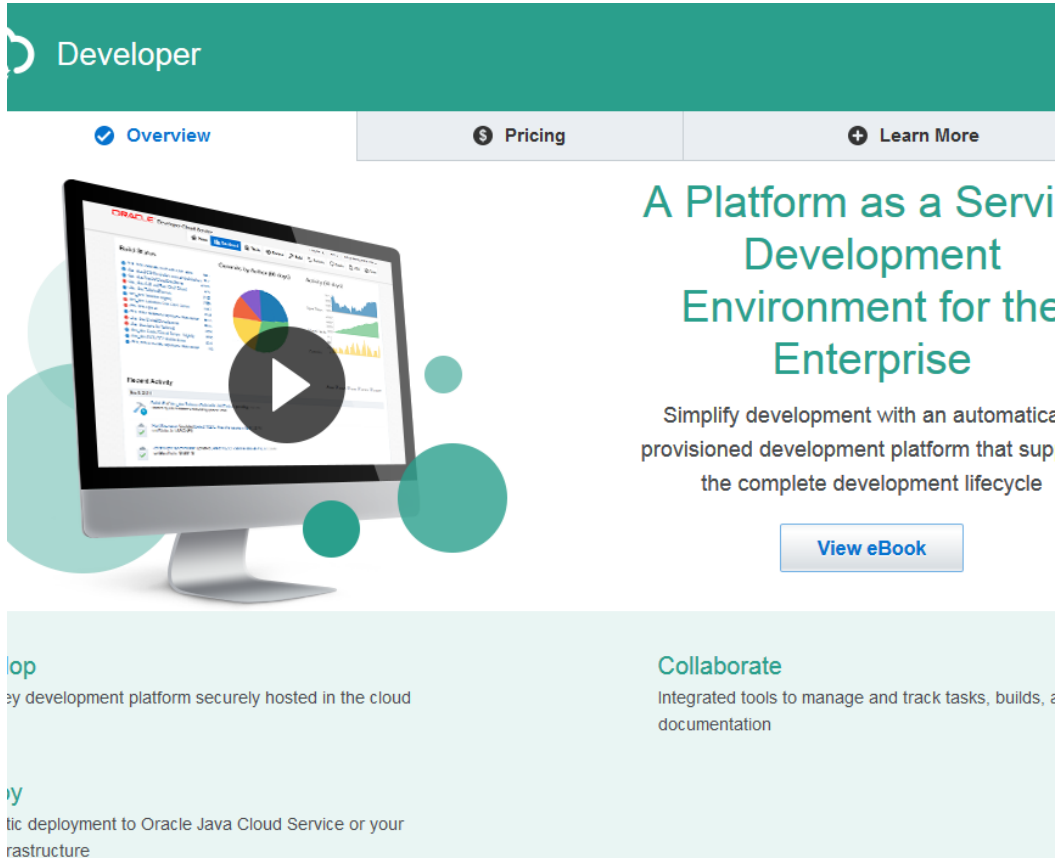
Developer Cloud Service Value Proposition

- Eliminate setup and startup time
- Reduce maintenance costs
- Leverage integrated ALM solution
- Extend code accessibility
- Improve team collaboration
- Simplify team management
- Streamline cloud deployment
- Produce better applications faster

Questions?

Get Started Today

cloud.oracle.com/developer_service



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Learn More

What	When	Where
HOL - Improved Development Lifecycle, Team Collaboration, and DevOps in the Cloud	Mon, 5:00	Hotel Nikko – Mendocino I/II
Oracle Cloud Platform for Rapid Applications Development and Integration in the Cloud	Tue, 12:15	Moscone South 302
Development Operations in the Cloud: A Use Case and Best Practices	Tue, 5:30	Parc 55 – Powell I/II
HOL - Improved Development Lifecycle, Team Collaboration, and DevOps in the Cloud	Wed, 2:45	Hotel Nikko – Mendocino I/II
DevOps for Mobile in the Cloud	Thu, 12:00	Moscone South 304

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