

클라우드 애플리케이션 개발 (Cloud Application Development)

Oracle Container Cloud Service를 이용한 클라우드 환경에서의 개발
(with GitHub, DockerHub)

Wonjo Yoo (wonjo.yoo@oracle.com)
Principal Sales Consultant
Cloud Infrastructure / aPaaS
Oracle Korea

클라우드 애플리케이션 개발(Cloud App. Development)

- Oracle Container Cloud Service를 이용한 클라우드 환경에서의 개발

- 강의 목표 : GitHub, DockerHub, 오라클 클라우드 개발환경의 이해

8	가상환경에서의 Web Application 개발 환경 구성	유원조	10/25	10/26
9	Container 애플리케이션 개발 개요 및 환경 구성 (Local Docker 환경 구성, Dockerfile 이해)	김영규	11/01	11/02
10	Single Container 애플리케이션 구성(Git, Docker hub를 이용한 빌드/배포 자동화)	김영규	11/08	11/09
11	Multi Container 애플리케이션 구성(WEB-WAS-DB로 구성된 Multi-tier 애플리케이션 환경 구성 및 개발)	유원조	11/15	11/16
12	Opensource 기반의 Multi Container 애플리케이션 구성(Spring/Tomcat/MySQL)	김영규	11/22	11/23
13	Oracle Container Cloud Service를 이용한 클라우드 환경에서의 개발 (GitHub,DockerHub)	유원조	11/29	11/30
14	애플리케이션 개발 트렌드(Microservices, Polyglot)	이미남	12/06	12/07
15	기말고사		12/13	12/14

클라우드 애플리케이션 개발(Cloud App. Development)

- Oracle Container Cloud Service를 이용한 클라우드 환경에서의 개발

- 강의 자료 URL
- <https://cloudnativeapp.slack.com/messages/C7SE712BF/>
- Lab 관련 소스 URL
- <https://github.com/wjyoo/dku>

Lab 6-1

Git 을 활용한 소스 버전관리

소요시간 : 40분

소스 코드 관리(SCM)

버전 관리의 필요성

- 팀단위 개발, 협업이 필요한 경우
 - 소스의 안전한 관리 (원격 저장소)
 - 프로젝트 도중 특정 시점으로 돌아가야 하는 경우
 - 소스를 누가 수정했는지 추적
 - 이전에 작성한 코드에 대한 변경 내용 확인
-
- 기존 프로젝트에 영향을 최소화 하면서 새로운 부분을 개발 → 새로 개발한 부분에 대한 검증절차와 메인코드에 통합 하는 기능

소스 코드 관리(SCM)

Subversion, CVS, Perforce, Mercurial, Git



파일단위

Copy, Modify(수정), Merge(병합)

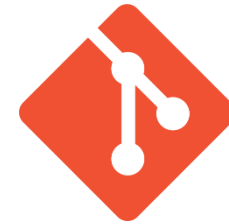


작업단위



Version everything.

작업단위, Lock 방식



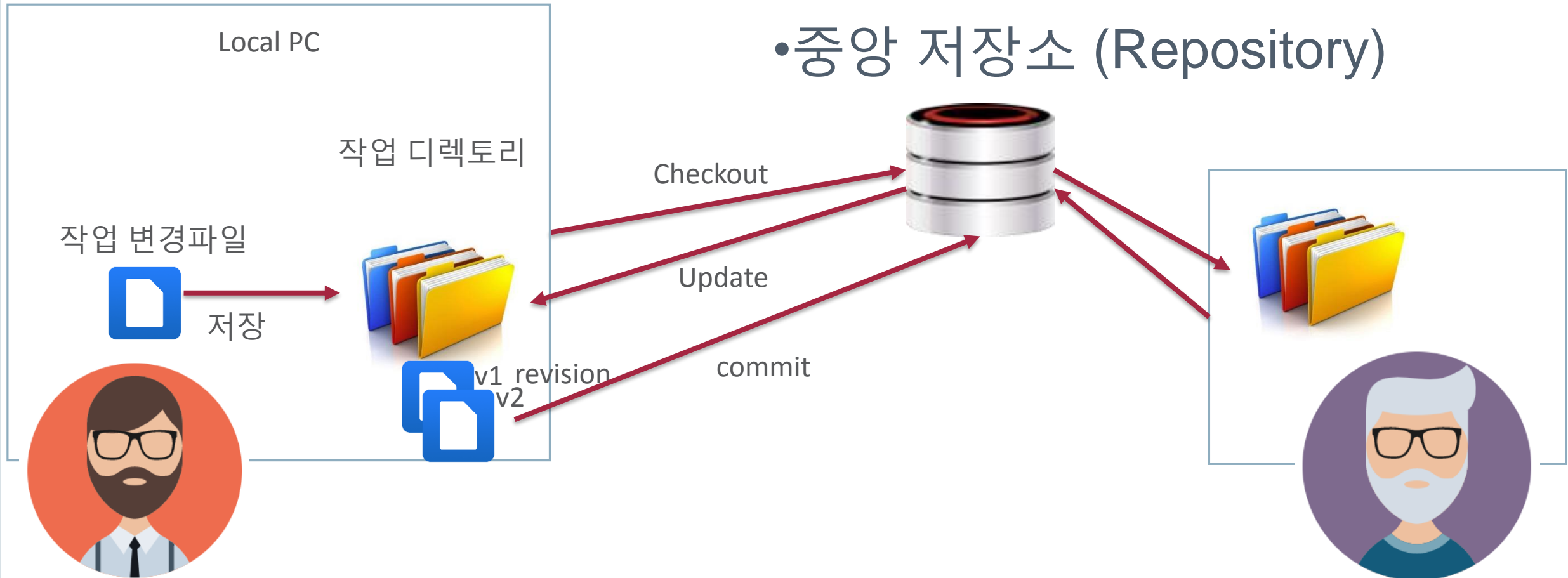
git



분산형

소스 코드 관리(SCM)

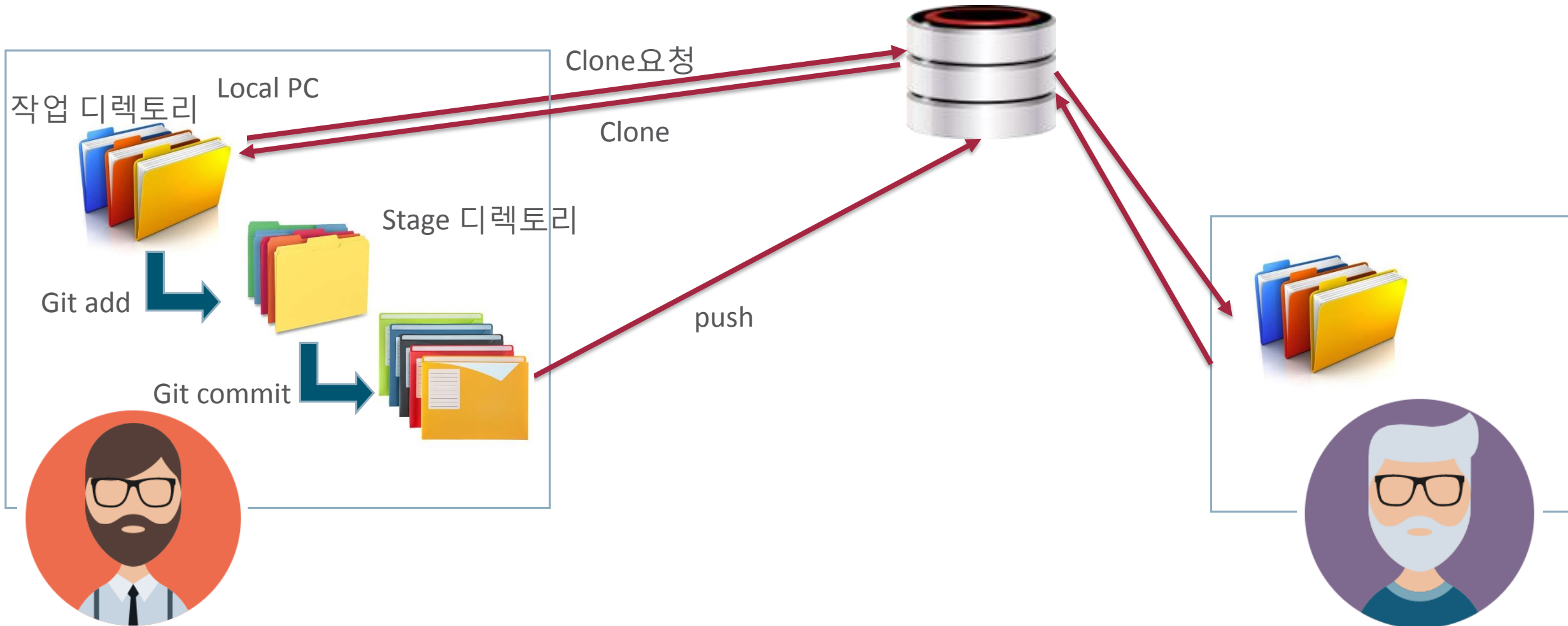
일반적인 방식



소스 코드 관리(SCM)

Git 방식

•중앙 저장소 (Repository)



소스 코드 관리(SCM)

GitHub 은?

- Git Repository의 종류는 (Private, Public)
- GitHub은 가장 유명한 Git Repository 웹호스팅으로,
Public은 무료, Private은 유료로 운영



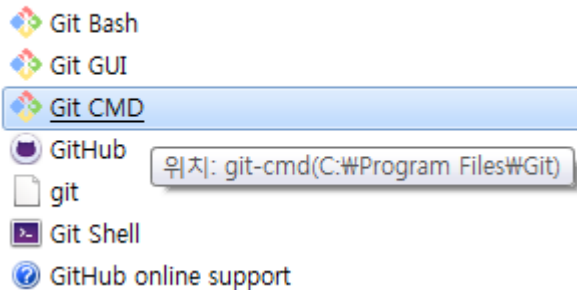


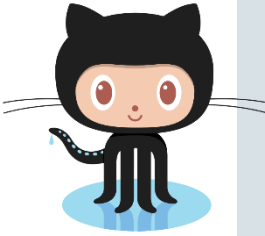
Lab 6-1 : Git 을 활용한 소스 버전관리

Git 계정 생성

- GitHub 계정 생성 (<https://github.com/>) 에서 sign up
- Git 설치 (<https://git-scm.com/downloads>)
- Git 실행
 - Linux의 경우 Terminal 창에서 git 실행
 - windows의 경우: Git CMD 실행

프로그램 (7)





Lab 6-1 : Git 을 활용한 소스 버전관리

Github소스 Clone후 수정하기

1. Github계정으로 로그인
2. 다른 사람의 소스를 자신의 Github 에 복사해 오기 (fork)
3. Github 소스 URL 복사
4. 로컬에서 사용할 작업 디렉토리 생성
5. Github → 로컬로 Clone(복사)하기
6. 로컬 파일 변경하기
7. Local Stage에 commit하기
8. GitHub Repository에 변경사항 Push하기

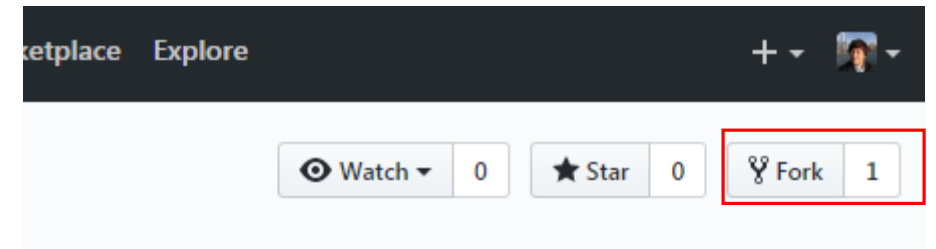


Lab 6-1 : Git 을 활용한 소스 버전관리

Git Hub으로 부터 clone하기

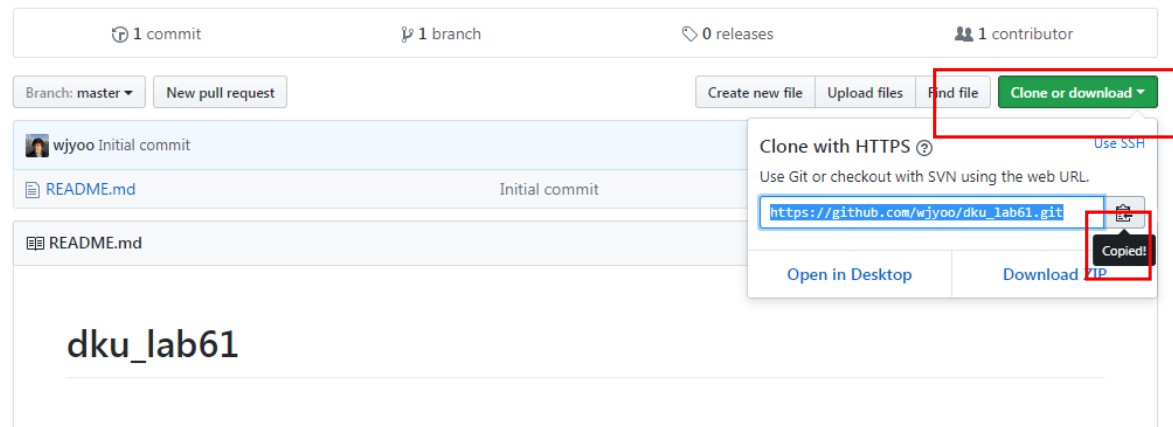
1. Github 계정으로 로그인
2. 다른 사람의 소스를 자신의 Github 에 복사해 오기 (fork)

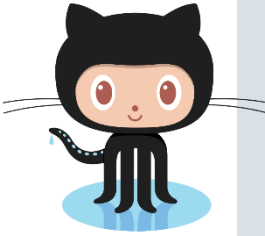
https://github.com/wjyoo/dku_lab61 에 접속한 후 우측 상단의 fork 버튼 클릭하여 자신의 github 에 복사



3. Github 소스 URL 복사

위에서 fork한 본인의 github 소스 URL을 클립보드에 복사





Lab 6-1 : Git 을 활용한 소스 버전관리 로컬에 복사하기

4. 로컬에서 사용할 작업 디렉토리 생성

```
mkdir gitwork
```

```
cd gitwork
```

5. Github → 로컬로 Clone(복사)하기

```
git clone [복사한 주소]
```

예) `git clone https://github.com/wjyoo/dku_lab61.git`



Lab 6-1 : Git 을 활용한 버전관리

Git Hub으로 부터 clone하기

6. Local 파일 변경

hello.txt 파일의 내용을 변경후 저장

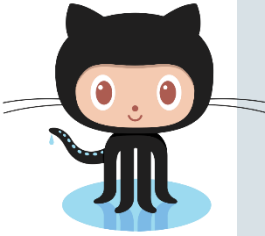
7. Local Stage에 commit하기

```
D:\work\test\dku_lab61>git add .
```

```
D:\work\test\dku_lab61>git commit -m comment
```

```
[master 1d172dd] comment
```

```
1 file changed, 1 insertion(+), 1 deletion(-)
```



Lab 6-1 : Git 을 활용한 버전관리

Git Hub으로 부터 clone하기

8. GitHub Repository에 변경사항 Push하기
git push

*처음 push시에 github의 계정정보 입력함

Oracle Cloud 소개

Oracle Container Cloud Service 생성

Oracle Cloud Service

<http://cloud.oracle.com>

<https://cloud.oracle.com/home>

The screenshot displays the Oracle Cloud Service website interface. At the top, the Oracle Cloud logo is on the left, and navigation links for Sign In, Contact, Chat, and English are on the right. A green 'Try for Free' button is also present. Below the navigation bar, a dropdown menu is open for 'Platform', showing options for Applications, Platform (selected), Infrastructure, and Resources. The main content area is titled 'Platform (PaaS)' and features a grid of service categories. On the right side of this section, there are links for 'API Catalog' and 'Cloud Marketplace'. The categories listed are: Data Management (Database, Database Backup, Big Data, Big Data Cloud, Event Hub, MySQL, NoSQL Database, Data Hub, Autonomous Data Warehouse Cloud), Application Development (Java, Application Container, Mobile and Chatbots, Visual Builder, AI Platform, Blockchain, Developer, API Catalog, Messaging), Integration (App Integration, Data Integration, Internet of Things, API Platform, Process), Management (Application Performance Monitoring, Infrastructure Monitoring, Log Analytics, Orchestration, IT Analytics), Content and Experience (Content and Experience, WebCenter Portal Cloud, DIVA Cloud), Business Analytics (Analytics Cloud, Business Intelligence, Big Data Discovery, Big Data Preparation, Data Visualization, Essbase), and Security (CASB, Identity, Configuration and Compliance, Security Monitoring and Analytics). A 'Read more >>' link is visible at the bottom of the grid.

ORACLE Cloud

Sign In Contact Chat English

Try for Free

Applications Platform Infrastructure Resources

Platform (PaaS) API Catalog Cloud Marketplace

Data Management

- Database
- Database Backup
- Big Data
- Big Data Cloud
- Event Hub
- MySQL
- NoSQL Database
- Data Hub
- Autonomous Data Warehouse Cloud

Application Development

- Java
- Application Container
- Mobile and Chatbots
- Visual Builder
- AI Platform
- Blockchain
- Developer
- API Catalog
- Messaging

Integration

- App Integration
- Data Integration
- Internet of Things
- API Platform
- Process

Management

- Application Performance Monitoring
- Infrastructure Monitoring
- Log Analytics
- Orchestration
- IT Analytics

Content and Experience

- Content and Experience
- WebCenter Portal Cloud
- DIVA Cloud

Business Analytics

- Analytics Cloud
- Business Intelligence
- Big Data Discovery
- Big Data Preparation
- Data Visualization
- Essbase

Security

- CASB
- Identity
- Configuration and Compliance
- Security Monitoring and Analytics

Read more >>

Oracle Container Cloud Service 란?

Oracle Cloud Infrastructure에서 컨테이너를 손쉽게 관리

- Multi container infrastructure 환경 제공
멀티 Host(서버), 다중 container 관리
- Docker 이미지 저장소 제공
- 서비스 관리 및 배포 기능
- Dashboard 제공 - 쉬운 모니터링, 관리 가능
- 편리한 서버 확장 기능

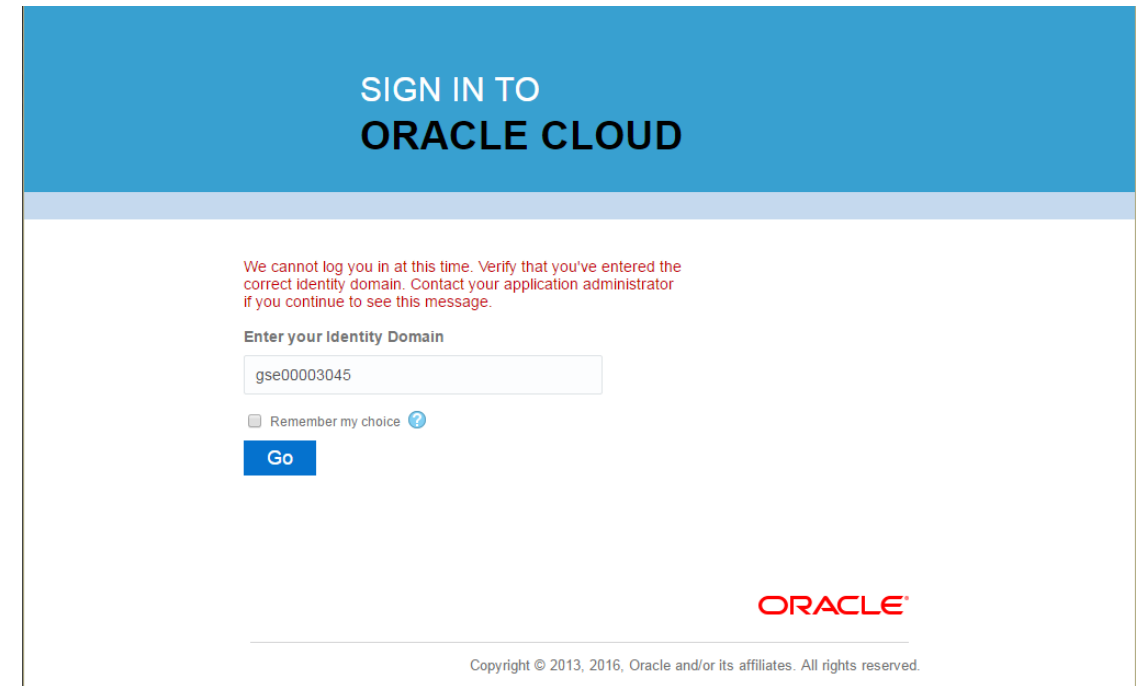
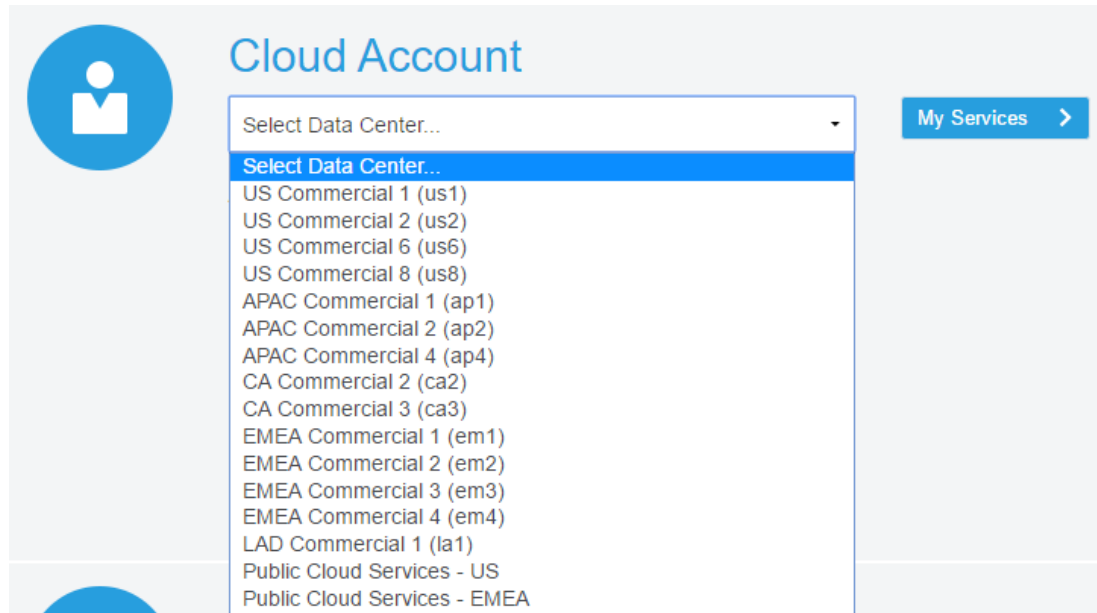
https://cloud.oracle.com/ko_KR/container-classic

<https://www.youtube.com/watch?v=yy5jRVxTGvc&feature=youtu.be>

Oracle Container Cloud Service 생성

Provisioning

- <https://cloud.oracle.com> 접속



Oracle Container Cloud Service 생성

Provisioning

SIGN IN TO
ORACLE CLOUD

Welcome gse00003045 [change domain](#) [?](#)

[Can't access your account?](#)

[Sign In](#)

ORACLE®

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Create Instance

Provision a new service in minutes

Account Management

Administer and manage your account and orders

Customize Dashboard

Specify which services appear on the dashboard

Cloud Services

0 Important Notifications

Identity Cloud
0 of 1 IDCS Fou...
Remaining

IaaS

Remaining

Storage Classic

Subscription ID: 1587870



Ravello Classic

Subscription ID: 1587870



Compute Classic

Subscription ID: 1587870



Container Classic

Subscription ID: 1587870



View Details

Open Service Console

Maintenance and Service Requests

View Account Usage Details



Create Instance

Provision a new service in minutes

Account Management

Administer and manage your account and orders

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Specify which services appear on the dashboard

Cloud Services

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Identity Cloud
0 of 1 IDCS Fou...
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Storage Classic

Subscription ID: 1587870



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Subscription ID: 1587870



Compute Classic

Subscription ID: 1587870



Container Classic

Subscription ID: 1587870



View Details

Open Service Console

Maintenance and Service Requests

View Account Usage Details



인스턴스

기준: 2017. 11. 28 오전 7시 23분 16초 UTC ↺

인스턴스 생성

You don't have any services. After meeting the [prerequisites](#), use this button to create a service.

Need help creating the service?

- [Watch a video](#)
- [Step through a tutorial](#)

▶ 인스턴스 생성 및 삭제 내역

취소



다음 >

Service

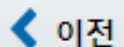
Provide basic service instance information.

Details

* Service Name	<input type="text" value="dkuc1"/>	?
Description	<input type="text" value="instance 1 for class"/>	?
Email Address	<input type="text" value="wonjo.yoo@oracle.com"/>	?
SSH Public Key	<input type="text" value="ssh-rsa AAAAB3NzaC1yc2EAA"/> 편집	?
Metering Frequency	HOURLY	

OCCS Configuration

* Admin Username	<input type="text" value="admin"/>	?
* Admin Password	<input type="password" value="....."/>	?
* Confirm Admin Password	<input type="password" value="....."/>	?
* Worker node Compute Shape	<input type="text" value="OC3 - 1.0 OCPU, 7.5GB RAM"/>	?
* Number of worker nodes	<input type="text" value="1"/>	?
* Worker node data volume size (GB)	<input type="text" value="30"/>	?



이전

취소



Service

확인

생성



Confirmation

Confirm your responses and create this OCCS instance.

Service

Service Name: dkuc1

Description: instance 1 for class

Email Address: wonjo.yoo@oracle.com

Service Level: Service with tooling support

Software Release: v17.2.5 Oracle Container Cl...

Software Edition: Standard Edition

SSH Public Key: ssh-rsa AAAAB3NzaC1yc2EAAA...

Metering Frequency: Hourly Subscription

OCCS Configuration

Software Edition: Standard Edition

Worker node Compute Shape: OC3 - 1.0 OCPU, 7.5GB RAM

Number of included management nodes: 1

Number of worker nodes: 1

Worker node data volume size (GB): 30



기준: 2017. 11. 28 오전 7시 28분 29초 UTC

Summary

1

인스턴스

2

OCPU

15^{GB}

메모리

2

공용 IP

인스턴스

인스턴스 이름으로 검색



인스턴스 생성



dkuc1

Status: Creating service ...

버전: 17.2.5-82

Nodes: 2

제출 날짜: 2017. 11. 28 오전 7시 28분 23초 UTC

OCPU: 2

메모리: 15 GB

저장 영역:

▶ 인스턴스 생성 및 삭제 내역



Overview

2

Nodes

Summary

2

Nodes

2

OCPUs

15_{GB}

Memory

70_{GB}

Storage

Virtual Machines

As of Sep 22, 2016 11:47:47 AM UTC 

[Healthcheck](#)



Host Name: tutorial-instance-occs-mgr-1

Public IP: 192.0.2.253

OCPUs: 1

Memory: 7.5 GB

Storage: 35 GB

Status: Ready

Instance: Runs tutorial-instance manager
1

Instance Type: MANAGER

Status: Ready



Host Name: tutorial-instance-occs-wkr-1

Public IP: 192.0.2.254

OCPUs: 1

Memory: 7.5 GB

Storage: 35 GB

Status: Ready

Instance: Runs tutorial-instance worker 1

Instance Type: WORKER

Status: Ready



► Oracle Container Cloud Service / tutorial-instance



Container Console

Access Rules

SSH Access

Overview

2

Nodes

Summary

2

Nodes

2

OCPUs

15_{GB}

Memory

70_{GB}

Storage

Virtual Machines

As of Sep 22, 2016 11:47:47 AM UTC 

Healthcheck



Host Name: tutorial-instance-occs-mgr-1

OCPUs: 1

Storage: 35 GB

Public IP: 192.0.2.253

Memory: 7.5 GB

Status: Ready

Instance: Runs tutorial-instance manager
1

Instance Type: MANAGER

Status: Ready



Host Name: tutorial-instance-occs-wkr-1

OCPUs: 1

Storage: 35 GB

Public IP: 192.0.2.254

Memory: 7.5 GB

Status: Ready

Instance: Runs tutorial-instance worker 1

Instance Type: WORKER

Status: Ready

Lab 6-2

Oracle Container Cloud Service **실** **러보기**

소요시간 : 40분

Lab 6-2 : Oracle Container Cloud Service 둘러보기

Oracle Container Cloud Service 에 Login하기

- 개인별 메일로 전송된 OCCS의 admin 서버 IP로 접속
- 전달한 계정 (admin / 비밀번호) 으로 로그인



연결이 비공개로 설정되어 있지 않습니다.

해커가 **129.150.126.217**에서 정보(예: 비밀번호, 메시지, 신용카드 등)를 도용하려고 시도
중일 수 있습니다. [자세히 알아보기](#)
NET::ERR_CERT_AUTHORITY_INVALID

세부정보 숨기기

안전 페이지로 돌아가기

이 서버가 **129.150.126.217**임을 입증할 수 없으며 컴퓨터의 운영체제에서 신뢰하는 보안
인증서가 아닙니다. 서버를 잘못 설정했거나 불법 사용자가 연결을 가로채고 있기 때문일
수 있습니다.

[129.150.126.217\(안전하지 않음\)](#)(으)로 이동

좌측과 같이 https에 대한 인증파일이 신뢰하지 않다고
나오는 것은 임시 인증서를 사용했기 때문입니다.

이때 맨 아래에 있는 xxx.xx.xxx (안전하지 않음) 으로 이동
을 누르시면 됩니다.

Lab 6-2 : Oracle Container Cloud Service 둘러보기

Oracle Container Cloud Service Dashboard 소개

- Service : 서비스 이름, 포트, base image 에 대한 정의 (docker-compose)
- Stacks : 여러개의 서비스를 연관해서 정의. 서비스 그룹.
- Deployments : 정의 되어 있는 서비스를 몇 개 구동시킬 것인지 선택한 후 직접 실행 시키는 곳
- Containers : 실제 구동된 docker runtime
- Images : 이미지 관리
- Hosts : 관리하고 있는 서버들

Lab 6-2 : Oracle Container Cloud Service 둘러보기

간단한 서비스 배포하기 (Apache)

- Services를 클릭한 후 Apache를 deploy(배포)해 보세요.
- 접속방법은 해당 hostname을 클릭후에 public ip로 접속하면 됩니다.

The screenshot displays the Oracle Container Cloud Service (OCCS) interface. At the top, there are tabs for 'Containers', 'Stack YAML', and 'Webhook'. Below these, a green banner provides information about the 'apache' service: 'apache — A Docker image with Apache and PHP. After the container deploys successfully, visit port 9001 on the host to see the phpinfo page. This example is provided as-is for educational purposes and should not be used in production.' To the right of the banner, it indicates '1 of 1 running containers — 100%'. Below the banner is a table with the following columns: Status, Container Name, Hostname, Uptime, and Health Check. The table contains one row with the following data: Status is 'RUNNING', Container Name is '0.apache.Apache-20171128-180304', Hostname is 'dkuc11-occs-wkr-1' (highlighted with a red box), Uptime is '1m', and Health Check is 'None configured'. A 'Details' button is located to the right of the table row.

Status	Container Name	Hostname	Uptime	Health Check
RUNNING	0.apache.Apache-20171128-180304	dkuc11-occs-wkr-1	1m	None configured

Lab 6-2 : Oracle Container Cloud Service 둘러보기

간단한 서비스 배포하기 (Apache)

ORACLE® Container Cloud Service

Get Help Settings Logout

Dashboard Search Tasks & Events Services Stacks Deployments Containers Images Hosts Resource Pools Registries Tags Service Discovery

Hosts ▶ dkuc11-occs-wkr-1

dkuc11-occs-wkr-1

Memory (549 MB of 8 GB)
7%

CPU (2 total CPUs)
0%

Uptime: 1:05
Last updated: 10 seconds ago

Load: 0.02

Interfaces

eth0	10.19.49.50
docker0	172.17.0.1
public_ip	129.150.127.211

About

OCES Version	v17.2.5-82
Docker Version	1.12.6
Docker API Version	1.24
Host Resource Pool	default

Tags
Add Tag

Lab 6-2 : Oracle Container Cloud Service 둘러보기

간단한 서비스 배포하기 (Apache)

The screenshot displays the Oracle Container Cloud Service (OCCS) interface. On the left is a dark sidebar with navigation links: Dashboard, Search, Tasks & Events, Services, Stacks, Deployments, Containers (highlighted), Images, Hosts, Resource Pools, Registries, Tags, and Service Discovery. The main content area is titled 'Containers ▶ 0.apache.Apache-20171128-180304'. Below this, a green header bar shows the container name and a refresh icon. The container's state is 'RUNNING'. Key details include: Started At: Nov 28, 2017 6:03 PM +09:00; Running Time: 5m; PID: 5781; Memory Limit: None; Swap Limit: None; Run Command: `-c echo "<?php phpinfo() ?>" > /app/index.php && httpd -D FOREGROUND`; Container ID: 4d73946df36f; Image ID: sha256:44537. At the bottom of the container details are 'Pause' and 'Stop' buttons, and a 'View Logs' button. Below the container details is a tabbed interface with 'Network' selected. The 'Network' tab shows: IP Address: 172.17.0.2; IP Prefix Length: 16; Gateway: 172.17.0.1; Bridge. To the right of these are port-related details: Exposed Ports: 80/tcp; Host Ports: 80/tcp ▶ 9001 (highlighted with a red box); Port Bindings: 80/tcp ▶ 9001; Port Specs: No port specs. A blue arrow points from the text '서비스 포트 확인' to the '9001' in the Host Ports field.

Containers ▶ 0.apache.Apache-20171128-180304

0.apache.Apache-20171128-180304

State **RUNNING**

Started At Nov 28, 2017 6:03 PM +09:00

Running Time 5m

PID 5781

Memory Limit None

Swap Limit None

Run Command `-c echo "<?php phpinfo() ?>" > /app/index.php && httpd -D FOREGROUND`

Container ID 4d73946df36f ⓘ

Image ID sha256:44537 ⓘ [Image Details](#)

[Pause](#) [Stop](#) [View Logs](#)

Network Paths Environment Variables Volumes DNS Host Config Details

IP Address 172.17.0.2

IP Prefix Length 16

Gateway 172.17.0.1

Bridge

Exposed Ports 80/tcp

Host Ports 80/tcp ▶ 9001

Port Bindings 80/tcp ▶ 9001

Port Specs No port specs


서비스 포트 확인

Lab 6-2 : Oracle Container Cloud Service 둘러보기

간단한 서비스 배포하기 (Apache)



9001 포트로 접속

PHP Version 5.6.14	
	
System	Linux 0.apache.Apache-20171128-180304 4.1.12-61.1.6.el6uek.x86_64 #2 SMP Thu Aug 18 21:59:11 PDT 2016 x86_64
Build Date	Oct 17 2015 09:23:33
Configure Command	/home/buildozer/aports/main/php/src/php-5.6.14/configure '--build=x86_64-alpine-linux-musl' '--host=x86_64-alpine-linux-musl' '--prefix=/usr' '--sysconfdir=/etc/php' '--localstatedir=/var' '--with-layout=GNU' '--with-config-file-path=/etc/php' '--with-config-file-scan-dir=/etc/php/conf.d' '--enable-inline-optimization' '--disable-debug' '--disable-rpath' '--disable-static' '--enable-shared' '--mandir=/usr/share/man' '--with-pic' '--disable-cli' '--with-apxs2' '--enable-bcmath=shared' '--with-bz2=shared' '--enable-calendar=shared' '--with-cdb' '--enable-ctype=shared' '--with-curl=shared' '--enable-dba=shared' '--with-db4=shared' '--enable-dom=shared' '--with-enchanted=shared' '--enable-exif=shared' '--with-freetype-dir=shared/usr' '--enable-ftp=shared' '--with-gd=shared' '--enable-gd-native-ttf' '--with-gdbm=shared' '--with-gettext=shared' '--with-gmp=shared' '--with-iconv=shared' '--with-icu-dir=/usr' '--with-imap=shared' '--with-imap-ssl=shared' '--enable-intl=shared' '--with-jpeg-dir=shared/usr' '--enable-json=shared' '--with-ldap=shared' '--enable-libxml=shared' '--enable-mbregex' '--enable-mbstring=all' '--with-mcrypt=shared' '--with-mysql=shared,mysqlnd' '--with-mysql-sock=/var/run/mysql/mysql.sock' '--with-mysqli=shared,mysqlnd' '--with-openssl=shared' '--with-pcre-regex=/usr' '--enable-pdo=shared' '--with-pdo-mysql=shared,mysqlnd' '--with-pdo-odbc=shared,unixODBC/usr' '--with-pdo-pgsql=shared' '--with-pdo-sqlite=shared/usr' '--with-pgsql=shared' '--enable-phar=shared' '--with-png-dir=shared/usr' '--enable-posix=shared' '--with-pspell=shared' '--with-regex=php' '--enable-session' '--enable-shmop=shared' '--with-snmp=shared' '--enable-soap=shared' '--enable-sockets=shared' '--with-sqlite3=shared/usr' '--enable-sysvmsg=shared' '--enable-sysvsem=shared' '--enable-sysvshm=shared' '--with-unixODBC=shared/usr' '--enable-xml=shared' '--enable-xmlreader=shared' '--with-xmlrpc=shared' '--with-xsl=shared' '--enable-wddx=shared' '--enable-zip=shared' '--with-zlib=shared' '--without-db1' '--without-db2' '--without-db3' '--without-qdbm' '--with-mssql=shared' '--with-pdo-dblib=shared' '--enable-opcache' 'build_alias=x86_64-alpine-linux-musl' 'host_alias=x86_64-alpine-linux-musl' 'CC=gcc' 'CFLAGS=-Os -fomit-frame-pointer -g' 'LDFLAGS=-Wl,--as-needed' 'CPPFLAGS=-Os -fomit-frame-pointer' 'CXXFLAGS=-Os -fomit-frame-pointer -g'
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php
Loaded Configuration File	/etc/php/php.ini
Scan this dir for additional .ini files	/etc/php/conf.d
Additional .ini files parsed	/etc/php/conf.d/json.ini, /etc/php/conf.d/openssl.ini, /etc/php/conf.d/phar.ini
PHP API	20131106
PHP Extension	20131226
Zend Extension	220131226
Zend Extension Build	API220131226.NTS
PHP Extension Build	API20131226.NTS

Lab 6-2 : Oracle Container Cloud Service 둘러보기

간단한 서비스 배포하기 (Tomcat)

- 위와 동일한 방법으로 Services를 클릭한 후 Tomcat을 deploy(배포)해 보세요.

Lab 6-2 : Oracle Container Cloud Service 둘러보기

Oracle Container Cloud 서비스의 Host에 접속하기

- Host 서버에 putty나 터미널로 접속합니다.
 - 윈도우의 경우 putty로 접속, Linux나 Mac은 terminal로 접속
 - <putty로 접속하는 경우>
이메일로 배포해 드린 privateKey를 사용해 서버에 접속합니다.
Putty 접속 방법 아래 참고
https://github.com/wjyoo/dku_occs/blob/master/OracleCloud_connect_with_putty.md
 - <Terminal에서 접속하는 경우(Linux or Mac)>
파일의 권한을 보호: `chmod 700 privateKey`
접속: `ssh -i privateKey opc@IP주소`

Lab 6-2 : Oracle Container Cloud Service 둘러보기

Oracle Container Cloud 서비스에서 Docker 확인해보기

- 접속한 서버에서 Docker image 확인
sudo docker images
- 접속한 서버의 Docker Container 상태 확인
sudo docker ps -a

```
[opc@dkuc11-occs-wkr-1 ~]$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
tomcat	8.5.4-jre8-alpine	6200b742c825	15 months ago	135 MB
k0st/alpine-apache-php	latest	4453767c6eb4	23 months ago	34.2 MB

```
[opc@dkuc11-occs-wkr-1 ~]$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
e364d42edb08	tomcat:8.5.4-jre8-alpine	"catalina.sh run"	4 hours ago	Up 4 hours	0.0.0.0:8888->8080/tcp	0.tomcat.Tomcat-20171128-181523
4d73946df36f	k0st/alpine-apache-php:latest	"/bin/sh -c 'echo \"<?\""	4 hours ago	Up 4 hours	0.0.0.0:9001->80/tcp	0.apache.Apache-20171128-180304

```
[opc@dkuc11-occs-wkr-1 ~]$
```

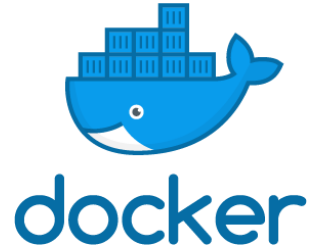
Lab 6-3

OCCS 에 App 배포하기

소요시간 : 60분

Lab 6-3 : Docker Hub Signup

Docker Hub 계정 생성



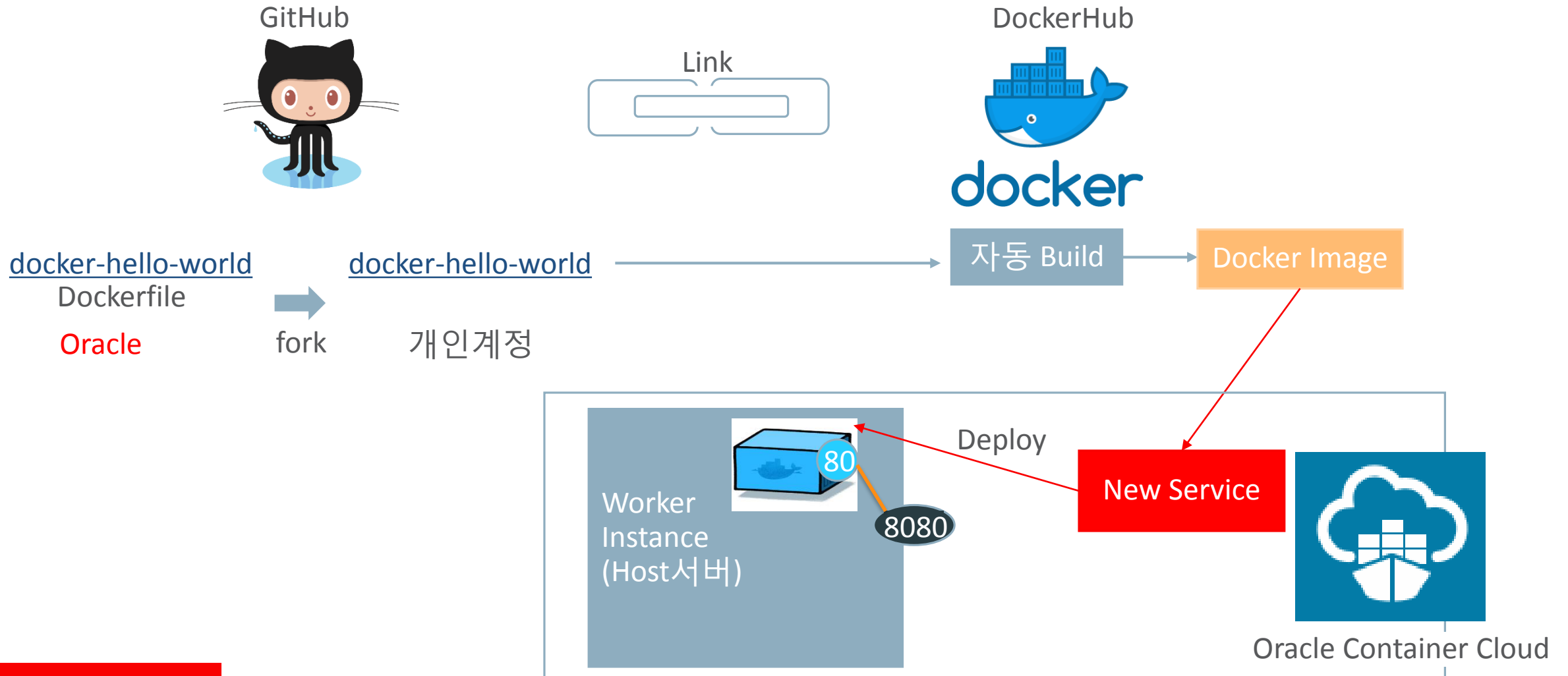
Docker Hub: Docker 이미지 원격 저장소

<https://hub.docker.com/>

Private : 1개까지 무료, Public 무료

Lab 6-3 : Oracle Container Cloud 에 App 배포하기

Lab 설명



Lab 6-3 : Oracle Container Cloud 에 App 배포하기

Lab 상세 가이드 주소



<https://github.com/wjyoo/OCCS-Workshop/blob/master/Lab300%20-%20OCCS%EC%97%90%20%EB%82%98%EC%9D%98%20%EC%B2%AB%EB%B2%88%EC%A7%B8%20App%20%EB%B0%B0%ED%8F%AC%ED%95%98%EA%B8%B0.md>



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