

300

Java Cloud Service Workshop

September, 2016

Introduction

In this lab you will learn how to backup your Java Cloud service using the Java Cloud Administration console. You will also learn how to restore your Cloud Service using that backup. You will also learn how to use the Java Cloud Service integrated Cloud UI to scale-up the Java Cloud Service by adding an additional node. You'll remove that node (scale-down) programmatically using the administration REST APIs.

Objectives

Backup the Java Cloud Service to a Storage Service

Scale-up the Java Cloud Service's WebLogic Server by requesting additional Node

Scale-down the WebLogic Server by removing a Node.

Restore the Java Cloud Service from a Backup

Required Artifacts

The following labs assume that the steps outlined in lab guide 200 have been completed.

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Operation Tasks

Backup the Java Cloud Service

STEP 1: Create Backup of JCS

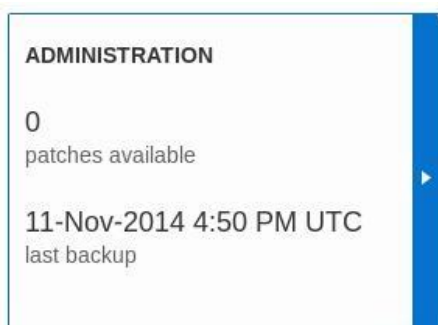
From the **Console** dropdown, select the **Java Cloud Service**



Click on **Alpha01JCS** to go to the instance dashboard.



Click on the **ADMINISTRATION** Group



Click on the **Back Up Now** Button

BACKUP PATCHING LOAD BALANCER

Incremental backup daily at 8:45 AM UTC (Full backup every Fri at 8:45 AM UTC) As of 14-Nov-2014 3:06:52 PM UTC

Last Successful Backup 14-Nov-2014 8:45 AM UTC Configure Backups Back Up Now

Available Backups

14-Nov-2014 8:45 AM UTC
Type: Full, scheduled
Available Until: 20-Dec-2014 8:45 AM UTC
Location: Disk

Contains:
Notes:

► Restoration History

Use the defaults, but enter a note **Post application deployment backup** and click on the **Back Up** Button

Back Up Now

This dialog submits a backup request for your Java Cloud Service. The backup will include the service configuration.

Select backup options.

* Include Database ☐ Yes ☒ No


* Keep Forever ☐ Yes ☒ No


Default retention is 30 days.

Notes


Enter notes for this

Back Up Cancel

The backup is now running. You can click the refresh  icon to monitor the progress.





10-Dec-2014 3:51 PM UTC
Type: Incremental, Dennis.Foley@oracle.com
Available Until: 09-Jan-2015 3:51 PM UTC
Location: Disk


Contains: 
Notes: Post application
deployment back...

Backing up...

Wait for the backup to complete – the hourglass icon will no longer appear when the backup is complete.

백업이 진행 중이고 JCS 아이콘이 Maintenance 상태로 변경된다.

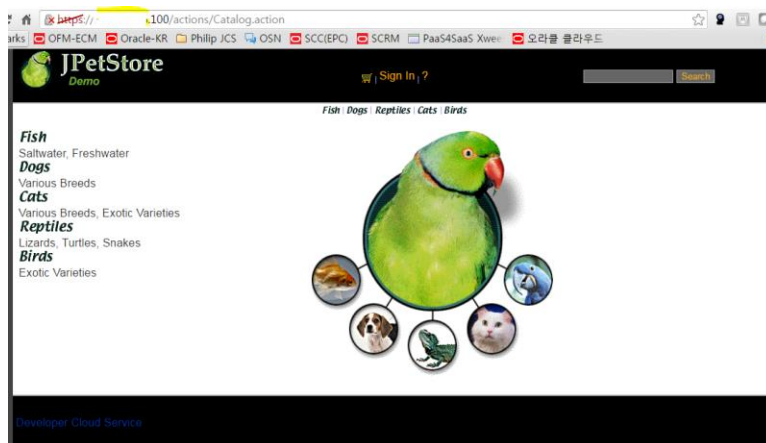
 ▶ **Oracle Java Cloud Service / Alpha01JCS** | 

 **Backup request was submitted.**

Overview
N/A

Backup | Patching | Load Balancer

JCS 인스턴스가 Maintenance 상태여도 애플리케이션은 정상적으로 동작된다. 브라우저 탭을 하나 더 열어 애플리케이션을 테스트 해본다. Lab2에서 배포한 App으로 테스트 하거나 샘플로 배포되어 있는 애플리케이션으로 테스트 하면 된다.



백업이 완료되었는지 확인한다.

[Configure Backups](#)[Back Up Now](#)

Available Backups (Last 7 Days)

9/1/2016



Search to Date



Sep 8, 2016 3:41:40 AM UTC

Type: Full, powderblue99@nate.com

Available Until: Oct 8, 2016 3:41:40 AM UTC

Location: Both Disk and Oracle Storage Cloud Service

Contains:

Notes: Post application
deployment...

Restore from Backup

STEP 2: Delete Application

Prior to doing the restore, we are going to go into WebLogic console and remove the application that we have been deployed. When we do the restore, we will see that the Application is once again available.

참고 : 이전 LAB에서 배포한 JPetstore 애플리케이션을 삭제한다.

Open WebLogic Console, click **Lock & Edit**, and then go to **Deployments**. Select **jpetstore** and click **Stop -> Force Stop Now**

Deployments

Start ▾		Stop ▾				
<input type="checkbox"/>	Name	When work completes				
<input type="checkbox"/>	coher	Force Stop Now				
<input type="checkbox"/>		Stop, but continue servicing administration requests			Active	✔ OK
<input type="checkbox"/>	⊕ DMS Application (12.2.1.0.0)				Active	✔ OK
<input type="checkbox"/>	⊕ em				Active	✔ OK
<input checked="" type="checkbox"/>	⊕ jpetstore				Active	✔ OK

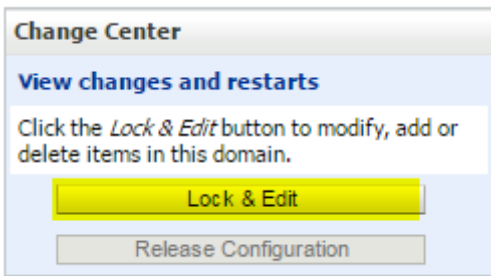
Click **Yes**

Force Stop Application Assistant

Stop Deployments

You have selected the following deployments to be immediately stopped. Press 'Yes' to continue, or 'No' to cancel.

- jpetstore



Now select **jpetstore** and click **Delete**.

Deployments

<input type="button" value="Install"/> <input type="button" value="Update"/> <input type="button" value="Delete"/>			
<input type="checkbox"/>	Name	State	Health
<input type="checkbox"/>	coherence-transaction-rar	Active	✓ OK
<input type="checkbox"/>	DMS Application (12.2.1.0.0)	Active	✓ OK
<input type="checkbox"/>	em	Active	✓ OK
<input checked="" type="checkbox"/>	jpetstore	Prepared	✓ OK

Click **Yes**

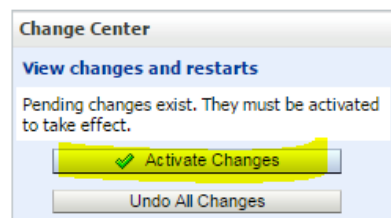
Delete Application Assistant

Delete Deployments

You have selected the following deployments to be removed from this domain configuration. Click 'Yes' to continue, or 'No' to cancel.

- jpetstore

ORACLE WebLogic Server Admin Console



Now click **Activate Changes**.

Verify that the **jpetstore** application is NOT working by entering the URL used previously in the lab. This is the URL that was copied as a bookmark.

JPetstore 애플리케이션을 수행해보고 애플리케이션이 삭제되어 Not Found가 나오는지 확인한다.

Error 404--Not Found

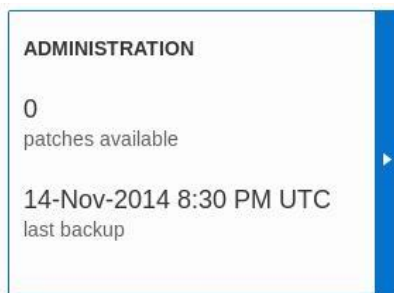
From RFC 2068 *Hypertext Transfer Protocol -- HTTP/1.1*:


10.4.5 404 Not Found

The server has not found anything matching the Request-URI.


STEP 3: Restore Java Cloud Service from Backup


Back on the JCS instance dashboard. Click on **ADMINISTRATION**




On your most recent backup, click  and select **Restore**.

Available Backups (Last 7 Days)









Sep 8, 2016 3:41:40 AM UTC

Type: Full, powderblue99@nate.com

Available Until: Oct 8, 2016 3:41:40 AM UTC

Location: Both Disk and Oracle Storage Cloud Service

Contains: 

Notes: Post application
deploymen...



Restore

Delete

Click the **Restore** Button

Restore - Full Backup Sep 8, 2016 3:41:40 AM UTC ✕

Caution: All changes that occurred after this backup will be lost.
This operation may take several minutes to complete.

☐ Restore binary files for WebLogic Server to version 12.2.1.0.160419 and JDK to version 1.8.0_91.

Notes


Restore Cancel

On final confirmation screen click **Yes, Restore Instance**


Restore Confirmation ✕

Restoring will overwrite the current contents of your service. Are you sure you want to restore?


Yes, Restore Service No, Cancel Request




Sep 8, 2016 3:41:40 AM UTC
Type: Full, powderblue99@nate.com
Available Until: Oct 8, 2016 3:41:40 AM UTC
Location: Both Disk and Oracle Storage Cloud Service


Contains: 
Notes: Post application
deployment...


Restoring...

Click refresh  to monitor the progress. Restore may take more than 20 minutes.


Restore History (Last 7 Days)

9/1/2016 


Search to Date 



☐ Select to include unsuccessful restore attempts.

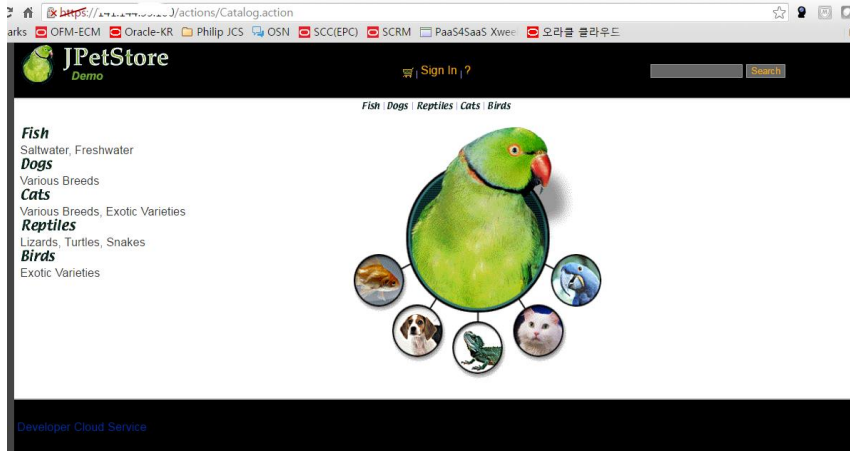


Sep 8, 2016 4:30:45 AM UTC
From Backup: Sep 8, 2016 3:41:40 AM UTC
Status: **Completed**

Contents: 
Notes:

Once the restore is completed, verify that the **jpetstore** application is working by entering the URL used previously in the lab to access the Product Catalog REST APIs. This is the URL that was copied as a bookmark.

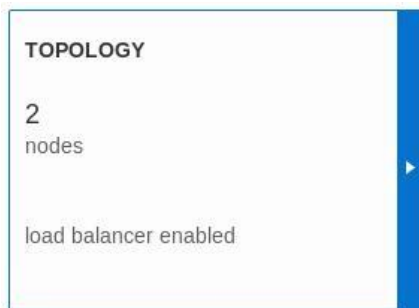
Restore 후에 다시 JPetstore 애플리케이션을 실행하여 잘 수행되는지 확인한다.



Request Additional Nodes

STEP 4: Request Additional WebLogic Managed Server

Click on **TOPOLOGY** Group to initiate the Scale-up activity. **Make note** that there are **2 nodes** in the Topology and the Load Balancer is enabled.

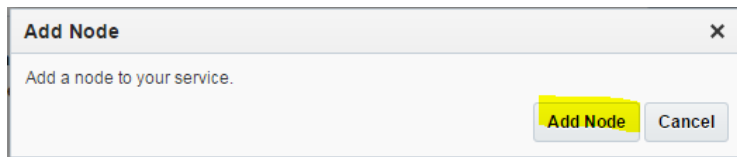


Click **Add Node** to add another managed server to the **Alpha01J_cluster**

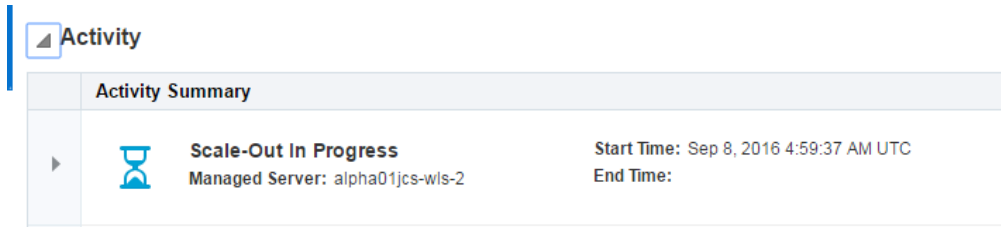
CLUSTER: Alpha01J_cluster Add Node


	Administration Server Domain: Alpha01J_domain Managed Server: Alpha01J_server_1 Public IP: 129.152.144.78	OCPUs: 1 Memory: 7.5 GB Storage: 47 GB
	Load Balancer Public IP: 129.152.144.84 Host: alpha01jcs-lb-1 Content endpoint: https://129.152.144.84:8081	OCPUs: 1 Memory: 7.5 GB Storage: 15 GB

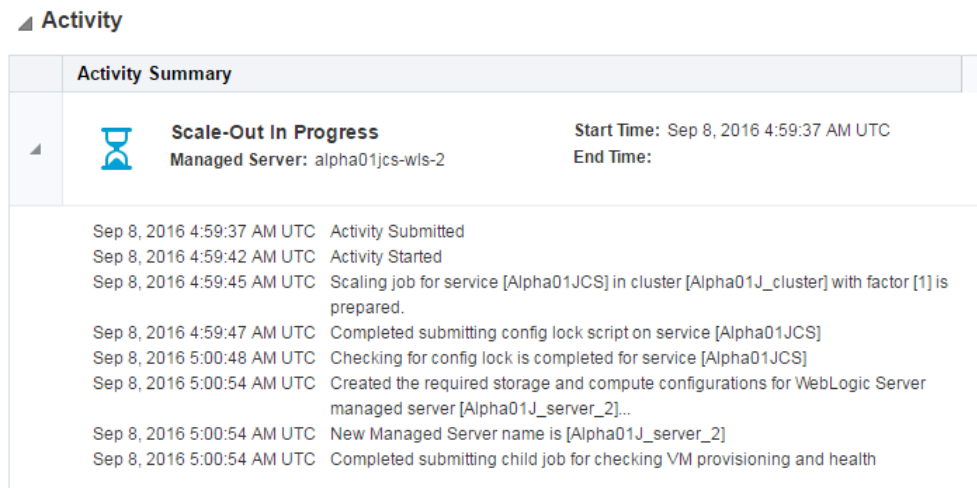
Click on the **Add Node** button to start the process.




Expand the **Scaling Activity** list, and you will now see that the status has changed to **In Progress** or **Adding...**



Click refresh  to monitor the progress.



확장 중에도 애플리케이션을 정상적으로 서비스된다. Jpetstore 애플리케이션을 이용하여 서비스가 정상 동작하는지를 확인한다.

Continue to monitor the progress and wait until the Topology indicates that there are 3 Nodes, the Load Balancer is once again enabled, and the Alpha01JCS instances no longer contains the warning indicator  in its icon. This process can take about 20 minutes.



신규 Node가 추가되고 있는 것을 확인할 수 있다

Cluster: Alpha01J_cluster			Add Node
	Administration Server Domain: Alpha01J_domain Managed Server: Alpha01J_server_1 Public IP: 141.144.35.101	OCPUs: 1 Memory: 7.5 GB Storage: 73 GB	
	Managed Server: Alpha01J_server_2 Host: alpha01jcs-wls-2	OCPUs: 1 Memory: 7.5 GB Storage: 53 GB Status: Preparing VM	

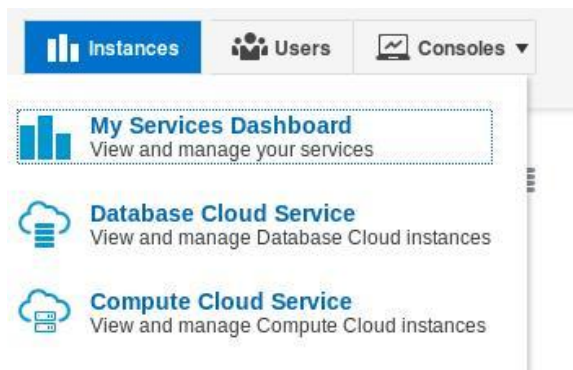
Once the additional node has been added, the Alpha01JCS icon will return to normal.

Instances > Alpha01JCS









CLUSTER: Alpha01J_cluster			Add Node
	Administration Server Domain: Alpha01J_domain Managed Server: Alpha01J_server_1 Public IP: 129.152.149.139	OCPUs: 1 Memory: 7.5 GB Storage: 47 GB	
	Managed Server: Alpha01J_server_2 Host: alpha01jcs-wls-2	OCPUs: 1 Memory: 7.5 GB Storage: 27 GB	

Now let's navigate to the Compute Cloud Service. From the **Consoles** dropdown select **Compute Cloud Service**.



You will now see an addition virtual machine with the name **Alpha01JCS wls 2**

INSTANCES

Enter text 			Show: All 
	Alpha01JCS lb 1 Status: Running (Since 4 days ago.) Tags: ORA.JCS, ORA.LB, ORA.JCS.PAAS.EE.MONTHL...	OCPUs: 1 Memory: 7.5 GB Storage: 15 GB	
	Alpha01JCS wls 1 Status: Running (Since 4 days ago.) Tags: ORA.JCS, ORA.WLS, ORA.JCS.PAAS.EE.MONT...	OCPUs: 1 Memory: 7.5 GB Storage: 47 GB	
	Alpha01JCS wls 2 Status: Running (Since 26 minutes ago.) Tags: ORA.JCS, ORA.WLS, ORA.JCS.PAAS.EE.MONT...	OCPUs: 1 Memory: 7.5 GB Storage: 27 GB	
	AlphaDBCS db 1 Status: Running (Since 4 days ago.) Tags: ORA.DCS, ORA.DB, ORA.DCS.PAAS.EE.MONT...	OCPUs: 1 Memory: 7.5 GB Storage: 61 GB	

Remove nodes – (Option)

STEP 5: WebLogic Managed Server 삭제

Node 삭제는 Cloud UI 콘솔에서 수행할 수 있다.

이 Lab은 개발자나 운영자들이 REST API를 program적으로 활용하여 사용할 경우를 위한 단계이므로 선택적으로 수행한다.

Firefox의 REST Client 나 Google의 Postman또는 cURL을 이용하여 REST 테스트를 실행하면 된다. 여기에서는 Google의 Postman을 이용할 것이다. Google Postman은 다음에서 받을 수 있다.

<https://chrome.google.com/webstore/detail/postman/fhbjgbfijnjbdgggehcdcbnccdddomop>

REST API 관련 정보 확인

Oracle Java Cloud Service

Services Activity SSH Access Welcome! | REST APIs

Summary

1	3	22.5 GB	175 GB	3
Services	OCPUs	Memory	Storage	Public IPs

Services

Enter a full or partial service name

As of Sep 8, 2016 5:25:57 AM UTC Create Service

Alpha01JCS

Version: 12.2.1.0
Edition: Enterprise Edition
JDK: 1.8.0_91

Nodes: 3
Load Balancer: Enabled
Created On: Sep 7, 2016 7:55:38 AM UTC

OCPUs: 3
Memory: 22.5 GB
Storage: 175 GB

https://apicatalog.oraclecloud.com/ui/views/apicollection/oracle-public/java/1.1/serviceinstances

Oracle Java Cloud Service

The Oracle Java Cloud Service REST API enables you to create and manage Oracle Java Cloud Service instances. This API provides an alternative to using the web APIs

Access Rules

Backup Configuration

Backups

Coherence Data Tiers

Health Monitoring

Managed Servers

Patches

Restorations

Service Instances

Manage the life cycle of your Oracle Java Cloud Service instances.

Expand All | Collapse All

Operations

POST	/paas/service/jcs/api/v1.1/instances/{identityDomainId}
GET	/paas/service/jcs/api/v1.1/instances/{identityDomainId}
GET	/paas/service/jcs/api/v1.1/instances/{identityDomainId}/{serviceId}
POST	/paas/service/jcs/api/v1.1/instances/{identityDomainId}/{serviceId}
PUT	/paas/service/jcs/api/v1.1/instances/{identityDomainId}/{serviceId}
GET	/paas/service/jcs/api/v1.1/instances/{identityDomainId}/status/{requestName}/job/{jobId}

Chrome의 Postman을 사용하거나 cURL 유틸리티를 사용하여 다음 REST API를 실행한다.

각 계정의 JCS 기본 REST Endpoint 확인

ORACLE

Services

CLOUD SERVICES

Dashboard

Oracle Java Cloud Service

Oracle Database Cloud Service

서비스 세부정보: Oracle Java Cloud Service
서비스 콘솔 열기

개요

청구 측정항목

측정항목 모니터링

추가 정보

계획: Oracle Java Cloud Service	CSI 번호: 사용할 수 없음
서비스 시작 날짜: 2016년 9월 7일	데이터 센터: EMEA Commercial 2
서비스 종료 날짜: 2016년 10월 7일	버전: 16.1.0.0.0
가입 ID: 541825790	상태: 활성
서비스 인스턴스 ID: 541825798	REST 끝점: https://jcs.emea.oraclecloud.com
고객 계좌: LG CNS (KR)	

Endpoint 예: <https://jcs.emea.oraclecloud.com/>

서버정보 조회

/paas/service/jcs/api/v1.1/instances/{identityDomainId}/{serviceId}/servers

URL : <https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/XXXXX/Alpha01JCS/servers>

Method : GET

GET

<https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krigcns/Alpha01JCS/servers>

Params

Send

Save

Authorization

Headers (2)

Body

Pre-request Script

Tests

Generate Code

Type

Basic Auth

Clear

Update Request

First we will send a GET request to view all the server details. Click **Authentication** and select **Basic Authentication**

GET

<https://jaas.oraclecloud.com>

Authorization

Headers (2)

No Auth

No Auth

Basic Auth

Digest Auth

OAuth 1.0

OAuth 2.0

Enter the following information and click **Okay**

Username = **<your Account user name >**
 Password = **<your password>**

Authorization

Headers (2)

Body

Pre-request Script

Tests

Generate Code

Type

Basic Auth

Clear

Update Request

Username

powderblue99@nate.com

Password

.....

Save helper data to request

Show Password

Next we will add a custom header property. Click **Headers** in drop down, and select **Custom Header**. Enter the following information and click **Okay**

Get JCS Servers

GET	https://jaas.oraclecloud.com/jaas/api/v1.1/instances/kroracle99862/TestDomain/	Params	Send
Authorization	Basic bWVVLW5hbS5sZWVAb3JhY2xlMnVbTpXZWxjb21lM		
X-ID-TENANT-NAME	kroracle99862		
Header	Value		

Now enter the following URL and click **Send**.

Click on **Response Body (highlight)** to see the results.

Body Cookies Headers (11) Tests

Pretty Raw Preview JSON

```
1 {
2   "servers": [
3     {
4       "clusterName": "Alpha01J_cluster",
5       "name": "Alpha01J_server_1",
6       "shape": "oc3",
7       "nodeType": "WLS",
8       "isAdmin": true,
9       "hostname": "141.144.35.101",
10      "status": "Ready",
11      "storageAllocated": 74752,
12      "creationDate": "2016-09-07T07:55:54.000+0000"
13    },
14    {
15      "clusterName": "Alpha01J_cluster",
16      "name": "Alpha01J_server_2",
17      "shape": "oc3",
18      "nodeType": "WLS",
19      "isAdmin": false,
20      "hostname": "alpha01jcs-wls-2",
21      "status": "Ready",
22      "jobId": "2072845",
23      "storageAllocated": 54272,
24      "creationDate": "2016-09-08T05:00:54.000+0000"
25    }
26  ]
27 }
```

Now change the Operation from **GET** to **DELETE** and add the specific server to remove at the end of the URL. Click **SEND**

서버 노드 삭제

/paas/service/jcs/api/v1.1/instances/{identityDomainId}/{serviceId}/servers/{name}

URL 예 :

https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/xxxx/Alpha01JCS/servers/Alpha01J_server_2

Method : DELETE

DELETE https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krigcns/Alpha01JCS/servers/Alpha01J_server_2 Params [Send](#) [Save](#)

Authorization Headers Body Pre-request Script Tests [Generate Code](#)

Type Basic Auth [Clear](#) [Update Request](#)

Username powderblue99@nate.com The authorization header will be generated and added as a custom header

Password Save helper data to request

☐ Show Password

X-ID-TENANT-NAME 헤더 추가

DELETE https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krigcns/Alpha01JCS/servers/Alpha01J_server_2 Params [Send](#) [Save](#)

Authorization Headers (2) Body Pre-request Script Tests [Generate Code](#)

key	value
Authorization	Basic cG93ZGVyYmx1ZTk5QG5hdGUuY29tOkpjc3J5ZGlyMQ==
X-ID-TENANT-NAME	krigcns

[Bulk Edit](#) [Presets](#)

Click on **Response Body (highlight)** to see the results.

DELETE https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krigcns/Alpha01JCS/servers/Alpha01J_server_2 Params [Send](#) [Save](#)

Authorization Headers (2) Body Pre-request Script Tests [Generate Code](#)

key	value
Authorization	Basic cG93ZGVyYmx1ZTk5QG5hdGUuY29tOkpjc3J5ZGlyMQ==
X-ID-TENANT-NAME	krigcns

[Bulk Edit](#) [Presets](#)

Body Cookies Headers (13) Tests Status: 202 Accepted Time: 9694 ms

Pretty Raw Preview JSON [Save Response](#)

```

1 {
2   "status": "New",
3   "details": {
4     "message": "JAAS-SCALING-044: Scaling in Job (ID: 2074785) server name [Alpha01J_server_2] submitted for service [Alpha01JCS]",
5     "jobId": "2074785"
6   }
7 }

```

Delete Job의 수행 상태 확인

`/paas/service/ics/api/v1.1/instances/{identityDomainId}/status/{requestName}/job/{jobId}`
위의 response에서 jobId를 이용하여 다음 URL 수행

예: <https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/XXXX/status/delete/job/2074785>

GET https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krlgcns/status/delete/job/2074785 Params Send Save

Authorization Headers (2) Body Pre-request Script Tests Generate Code

Authorization Basic cG93ZGVyYmx1ZTk5QG5hdGUuY29tOkpjc3J5ZGlyMQ== Bulk Edit Presets

X-ID-TENANT-NAME krlgcns

key value

Body Cookies Headers (14) Tests Status: 202 Accepted Time: 3080 ms

Pretty Raw Preview JSON 🔍

```

1 {
2   "service_name": "Alpha01JCS",
3   "version": "12cRelease2",
4   "wlsVersion": "12.2.1.0.160419",
5   "status": "Maintenance",
6   "error_status_desc": "",
7   "compliance_status": "",
8   "compliance_status_desc": "",
9   "auto_update": "true",
10  "description": "Alpha01JCS",
11  "identity_domain": "krlgcns",
12  "creation_time": "2016-09-07T07:55:38.779+0000",
13  "last_modified_time": "2016-09-08T05:17:12.875+0000",
14  "created_by": "powderblue99@nate.com",
15  "service uri": "https://jcs.emea.oraclecloud.com/paas/service/jcs/api/v1.1/instances/krlgcns/Alpha01JCS".

```



Return to the Java Cloud Service dashboard, and you will see that the service is in Maintenance mode as the node is being removed.



Alpha01JCS
Status: Maintenance
Version: 12.1.2.0
Edition: Enterprise Edition

After several minutes, the Alpha01JCS will no longer be in Maintenance mode, and the node will be removed from the instance dashboard.

Activity

Activity Summary		
	 Scale-In In Progress Managed Server: alpha01jcs-wls-2	Start Time: Sep 8, 2016 6:06:39 AM UTC End Time:
<div> <div>Sep 8, 2016 6:06:39 AM UTC</div> <div>Activity Submitted</div> </div> <div> <div>Sep 8, 2016 6:06:44 AM UTC</div> <div>Activity Started</div> </div> <div> <div>Sep 8, 2016 6:06:45 AM UTC</div> <div>Scaling job for service [Alpha01JCS] in cluster [Alpha01J_cluster] with factor [1] is prepared.</div> </div> <div> <div>Sep 8, 2016 6:06:49 AM UTC</div> <div>Completed submitting config lock script on service [Alpha01JCS]</div> </div> <div> <div>Sep 8, 2016 6:08:09 AM UTC</div> <div>Scale in host [alpha01jcs-wls-2] is permitted, proceeding to next action</div> </div> <div> <div>Sep 8, 2016 6:08:10 AM UTC</div> <div>Completed submitting OTD script for remote execution on service [Alpha01JCS]</div> </div> <div> <div>Sep 8, 2016 6:09:11 AM UTC</div> <div>Removed WebLogic managed server [alpha01jcs-wls-2] to OTD origin server pool</div> </div> <div> <div>Sep 8, 2016 6:09:13 AM UTC</div> <div>Completed submitting shutdown script for remote execution on service [Alpha01JCS]</div> </div> <div> <div>Sep 8, 2016 6:10:15 AM UTC</div> <div>Successfully created IAAS resource removal child job for service [alpha01jcs-wls-2]</div> </div> <div> <div>Sep 8, 2016 6:13:25 AM UTC</div> <div>Stopped Virtual Machine wls/vm-2...</div> </div> <div> <div>Sep 8, 2016 6:13:30 AM UTC</div> <div>Removed Virtual Machine wls/vm-2...</div> </div> <div> <div>Sep 8, 2016 6:13:30 AM UTC</div> <div>Child job [2074801] completed removing all compute resources for host [alpha01jcs-wls-2].</div> </div> <div> <div>Sep 8, 2016 6:13:32 AM UTC</div> <div>Completed submitting domain config verify script for remote execution on service [Alpha01JCS]</div> </div>		

This Lab is completed