

PaaS 환경에서 전자 정부 프레임워크 배포 데모

- 목적

- 실제 업무에서 가장 많이 사용하는 전자정부 프레임워크 기반의 애플리케이션을 오픈시프트 환경에서도 가능함을 보여주기 위함입니다.

- 내용

- Git 저장소에 저장된 전자정부프레임워크 기반 애플리케이션과 톰캣 엔진설정을 이용하여 컨테이너 환경에 S2I 방식으로 배포하는 과정을 확인합니다.



우리 업무를 컨테이너로 서비스하려면
어떤 절차가 필요한가요?



Developer



Git

**1**Image
RegistryBuilder
ImageSource-to-
Image
(S2I)Application
Image

User



Router

3**2**

Service



registry

**1**

```
oc new-build openshift/khan-jbossweb53-tomcat9:5.1.0-6.4~https://github.com/example-opennaru/poc_app.git --name=egov-demo
```

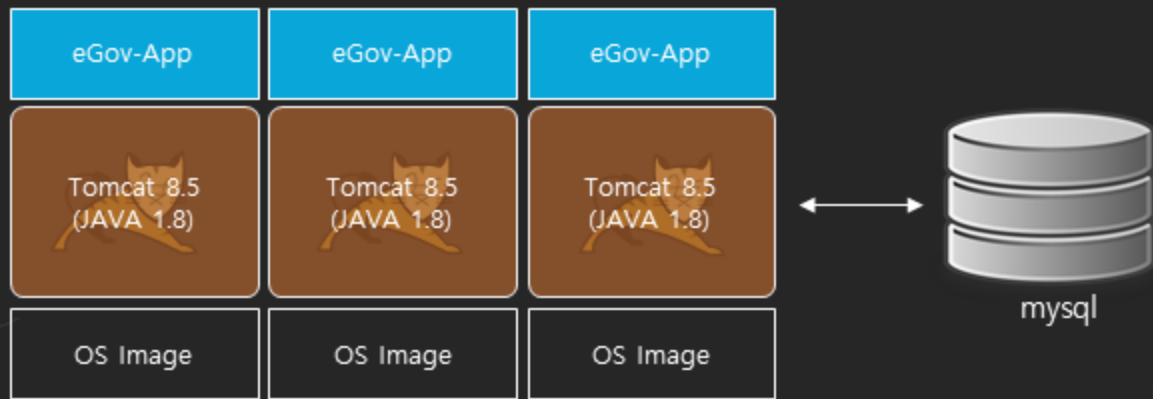
2

```
oc new-app egov-demo --as-deployment-config=true
```

3

```
oc expose svc/egov-demo
```

Container 환경 테스트 구성도




S2I 빌드를 위한 저장소 환경구성

git 저장소 구성

디렉토리	파일	비고
configuration	server.xml context.xml	톰캣 엔진설정
deployments	ROOT.war	애플리케이션
lib	example.jar	톰캣 라이브러리

데이터소스 구성

DB 엔진	데이터베이스명	접속정보
mysqld 10.3.9	egovdb	root / openmaru



신규 서비스 구축

전자정부프레임워크 애플리케이션
S2I 빌드/배포

git 저장소 구성 확인

The screenshot shows a GitHub repository page for 'befaker90/example_poc'. The main heading reads 'Learn Git and GitHub without any code!' with a subtext 'Using the Hello World guide, you'll start a branch, write comments, and open a pull request.' and a 'Read the guide' button. Below this, the repository name 'befaker90/example_poc' is shown with options to 'Unwatch', 'Star' (0), and 'Fork' (0). The navigation bar includes 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The repository details show 'main' branch, '1 branch', and '0 tags'. A table lists the commit history:

Commit	Author	Time	Commits
befaker90 first commit	3d53f09	17 days ago	2 commits
configuration	first commit	17 days ago	
deployments	first commit	17 days ago	
README.md	first commit	17 days ago	

The README.md content is visible below the table, starting with '# example_poc'. On the right side, there are sections for 'About', 'Releases', and 'Packages'. A large black text box is overlaid at the bottom of the screenshot.

오픈시프트에서 소스를 가져갈 수 있도록
로컬 환경을 GIT 저장소로 푸시.

애플리케이션 S2I 빌드(1/3)



The screenshot shows the Red Hat OpenShift console interface. The left sidebar contains navigation options: Administrator, Home (Overview), Projects, Search, Explore, Events, Operators, Workloads, Networking, Storage, Builds, Pipelines, Monitoring, Compute, User Management, and Administration. The main content area displays a list of Projects with columns for Name, Display Name, Status, and more. A terminal window on the right shows the execution of the following commands:

```
[root@bastion ~]# oc new-project example-egov
Now using project "example-egov" on server "https://api.ocp4.openmaru-poc.com:6443".
You can add applications to this project with the 'new-app' command. For example, try:
  oc new-app ruby-https://github.com/sclorg/ruby-ex.git
to build a new example application in Ruby. Or use kubectl to deploy a simple Kubernetes application:
  kubectl create deployment hello-node --image=gcr.io/hello-minikube-zero-install/hello-node
[root@bastion ~]#
```

Name	Display Name	Status	Requester	Memory	CPU	Created
PR default	No display name	Active				
PR example-autoscaling	No display name	Active				
PR example-deploy	No display name	Active				
PR example-egov	No display name	Active				
PR example-ml	No display name	Active				
PR example-rstudio	No display name	Active	ocpadm	61.9 MiB	0.001 cores	Nov 10, 5:20 pm
PR hg-auto	No display name	Active	ocpadm	-	-	Nov 9, 2:11 pm
PR kube-node-lease	No display name	Active	No requester	-	-	Oct 29, 11:12 am
PR kube-public	No display name	Active	No requester	-	-	Oct 29, 11:12 am
PR kube-system	No display name	Active	No requester	-	-	Oct 29, 11:12 am
PR ml-example	No display name	Active	ocpadm	2,270.7 MiB	0.486 cores	Oct 29, 1:50 pm
PR msa-backend	MSA BACKEND	Active	ocpadm	-	-	Nov 5, 1:03 pm
PR msa-front	MSA FRONT	Active	ocpadm	-	-	Nov 5, 1:02 pm
PR nfs-test	No display name	Active	system.admin	73.7 MiB	0.005 cores	Oct 29, 12:34 am
PR ocpadm-codeready	No display name	Active	ocpadm	-	-	Oct 30, 11:16 am
PR openmaru-apm	No display name	Active			0.797 cores	Oct 30, 2:52 pm
PR openshift	No display name	Active				Oct 29, 11:32 am

오픈시프트 BuildConfig 생성.

전자정부프레임워크 애플리케이션 배포(2/3)



The screenshot displays the Red Hat OpenShift console interface on the left and a terminal window on the right. The console shows the 'Builds' page for the 'example-egov' project, listing a build named 'egov-demo-1' in the 'example-egov' namespace. The terminal window shows the execution of the 'oc new-build' command, which creates a new build configuration for a Ruby application using the 'hello-node' image. The terminal output shows the build configuration details, including the source code location and the resulting image stream tag 'egov-demo:latest'. The build process is successful, as indicated by the 'Success' message at the end of the terminal output.

```
to build a new example application in Ruby. Or use kubectl to deploy a simple Kubernetes application:
  kubectl create deployment hello-node --image=gcr.io/hello-minikube-zero-install/hello-node

[root@bastion ~]# oc new-build openshift/khan-jbossweb53-tomcat9:5.1.0-6.4-https://github.com/befaker90/example_poc.git --name=egov-d
emo -n example-egov
--> Found image 287fb88 (7 days old) in image stream "openshift/khan-jbossweb53-tomcat9" under tag "5.1.0-6.4" for "openshift/khan-jb
ossweb53-tomcat9:5.1.0-6.4"

JBoss Web Server 5.3
-----
Platform for building and running web applications on JBoss Web Server 5.3 - Tomcat v9

Tags: builder, java, tomcat9

* A source build using source code from https://github.com/befaker90/example_poc.git will be created
* The resulting image will be pushed to image stream tag "egov-demo:latest"
* Use 'oc start-build' to trigger a new build

--> Creating resources with label build=egov-demo ...
imagestream.image.openshift.io "egov-demo" created
buildconfig.build.openshift.io "egov-demo" created
--> Success
[root@bastion ~]#
```

빌드된 컨테이너 이미지 배포 및
라우팅 설정 추가.

전자정부프레임워크 애플리케이션 라우터 노출(3/3)



The screenshot shows the Red Hat OpenShift console interface on the left and a terminal window on the right. The console displays the 'Builds' page for the 'example-egov' project, showing a build named 'egov-demo-1' in the 'example-egov' namespace. The terminal window shows the execution of 'oc new-app' and 'oc expose' commands, resulting in the creation of an image stream and a deployment configuration, and the exposure of the service.

```
imagestream.image.openshift.io "egov-demo" created
buildconfig.build.openshift.io "egov-demo" created
--> Success
[root@bastion ~]# oc new-app egov-demo --as-deployment-config=true
--> Found image fi28091 (About a minute old) in image stream "example-egov/egov-demo" under tag "latest" for "egov-demo"

JBoss Web Server 5.3
-----
Platform for building and running web applications on JBoss Web Server 5.3 - Tomcat v9

Tags: builder, java, tomcat9

* This image will be deployed in deployment config "egov-demo"
* Ports 8080/tcp, 8443/tcp, 8778/tcp will be load balanced by service "egov-demo"
* Other containers can access this service through the hostname "egov-demo"

--> Creating resources ...
deploymentconfig.apps.openshift.io "egov-demo" created
service "egov-demo" created
--> Success
Application is not exposed. You can expose services to the outside world by executing one or more of the commands below:
'oc expose svc/egov-demo'
Run 'oc status' to view your app.
[root@bastion ~]#
```

빌드된 컨테이너 이미지 배포 및 라우팅 설정 추가.

신규 서비스 구축

Container 환경에서 전자정부프레임워크
애플리케이션 정상동작 확인

전자정부프레임워크 애플리케이션 서비스 확인



The image shows a screenshot of the Openmaru APM monitoring console and a terminal window. The console displays various performance metrics for the application 'egov-d-4-xwm96'. The terminal window shows the output of the 'oc get route' command, indicating that the application is accessible via the 'egov-demo' route.

Terminal Output:

```
root@bastion:~# oc get route
NAME          HOST/PORT          PATH          SERVICES          PORT          TERMINATION  WILDCARD
egov-demo     egov-demo-example-egov.apps.ocp4.openmaru-poc.com  egov-demo     8080-tcp         None
```

Monitoring Console Metrics:

- Request Viewer: 2.0
- Request Velocity: 0.0tps, 0.00s, 2u
- Transaction Heatmap (T-Map): 1
- Avg. Res. Time: 0
- Error Rates: 0
- JVM Heap Usage: 0
- Active DB Connection: 0

애플리케이션 정상 작동 여부 확인.

애플리케이션 정상 작동 여부 확인.

S2I 이미지 빌드 로그

```
B egov-demo-1 Running
57 lines
Copying blob sha256:aa9b04beedaa5daa0399043b4979cbc34a37e2af75abd07d6178e20649810fad
Copying blob sha256:dab688bfceb6d0775ee962449c986ae89ad4c91499930c11a164252e9333fb6e
Copying config sha256:287fb88df31b7c9875926f9a8fb08663cebea262f1568fe8318cb63e3fe0a544
Writing manifest to image destination
Storing signatures
Generating dockerfile with builder image image-registry.openshift-image-registry.svc:5000/openshift/
STEP 1: FROM image-registry.openshift-image-registry.svc:5000/openshift/khan-jbossweb53-tomcat9@sha:
STEP 2: LABEL "io.openshift.build.commit.date"="Sat Oct 31 08:41:07 2020 +0900" "io.openshift
STEP 3: ENV OPENSIFT_BUILD_NAME="egov-demo-1" OPENSIFT_BUILD_NAMESPACE="example-egov" OPEI
STEP 4: USER root
STEP 5: COPY upload/src /tmp/src
STEP 6: RUN chown -R 185:0 /tmp/src
STEP 7: USER 185
STEP 8: RUN /usr/local/s2i/assemble
INFO S2I source build with plain binaries detected
INFO Copying deployments from . to /deployments...
INFO Copying configuration from configuration to /opt/jws-5.3/tomcat/conf...
context.xml
example.xml
server.xml
INFO Copying deployments from deployments to /deployments...
'/tmp/src/deployments/ROOT.war' -> '/deployments/ROOT.war'
```



openmaru

제품 / 서비스에 관한 문의

- 콜 센터 : 02-469-5426 (휴대폰 : 010-2243-3394)
- 전자 메일 : sales@openmaru.com