

# XCOM, Variable, Role, Connection 이란?

## 1. XCOM

Task는 논리적으로 분리되어 각 Task는 Instance화 됩니다. 하지만 Workflow에서는 이전 Task의 Output이 다음 Task에 전달이 되어야 하거나 영향을 줄 경우가 있습니다. 이처럼 Task 간의 통신 매개체를 `xcoms` 이라고 합니다.

XCOM은 `{key:value}` 형태로 전달되며 `task_id`, `dag_id`를 포함합니다. 기본적으로 XCOM을 이용하게 되면 Return 값은 String이나 `render_template_as_native_obj=True` 옵션을 설정하면 Int나 Dict 같은 Python의 원형을 그대로 전달할 수 있습니다.

예시 Code)

[Native OBJ](#).

XCom은 `xcom_push` 및 `xcom_pull` 메서드를 사용하여 Task에서 다른 Task로 통신 가능합니다.

- `xcom_push`

```
def push_xcom(**kwargs):
    data_string = {"key1": 1, "key2": 2, "key3": 3}
    kwargs['task_instance'].xcom_push(key='pushed_value', value=data_string)

task_push = PythonOperator(
    task_id="task_push",
    provide_context=True,
    python_callable=push_xcom,
    dag=dag
)
```

- `xcom_pull`

```
def pull_xcom(**kwargs):
    order_data = kwargs['task_instance'].xcom_pull("task_push",
    key='pushed_value')
    pprint(order_data)

task_pull = PythonOperator(
    task_id="task_pull",
    provide_context=True,
    python_callable=pull_xcom,
    dag=dag
)
```

`jinja template` 과 `macro` 를 사용하여 표현 가능합니다.

```
def pull_xcom_template(order_data):  
    pprint(order_data)  
  
task_pull_template = PythonOperator(  
    task_id="task_pull_template",  
    op_kwargs={"order_data": "{{ti.xcom_pull('task_push',  
key='pushed_value')}}"},  
    provide_context=True,  
    python_callable=pull_xcom_template,  
    dag=dag  
)
```

예시 Code)

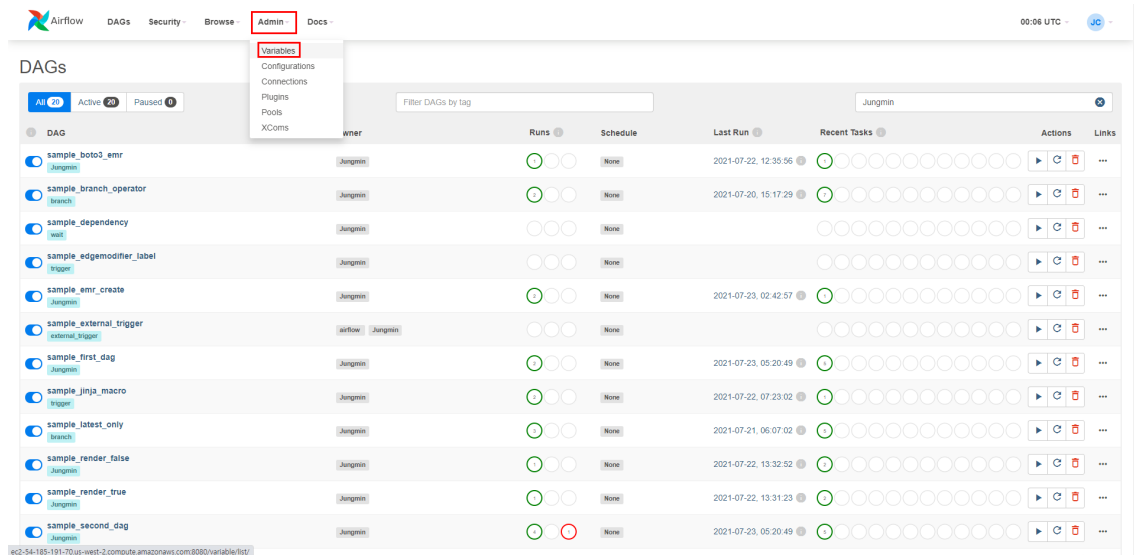
[Xcom](#)

## 2. Variable

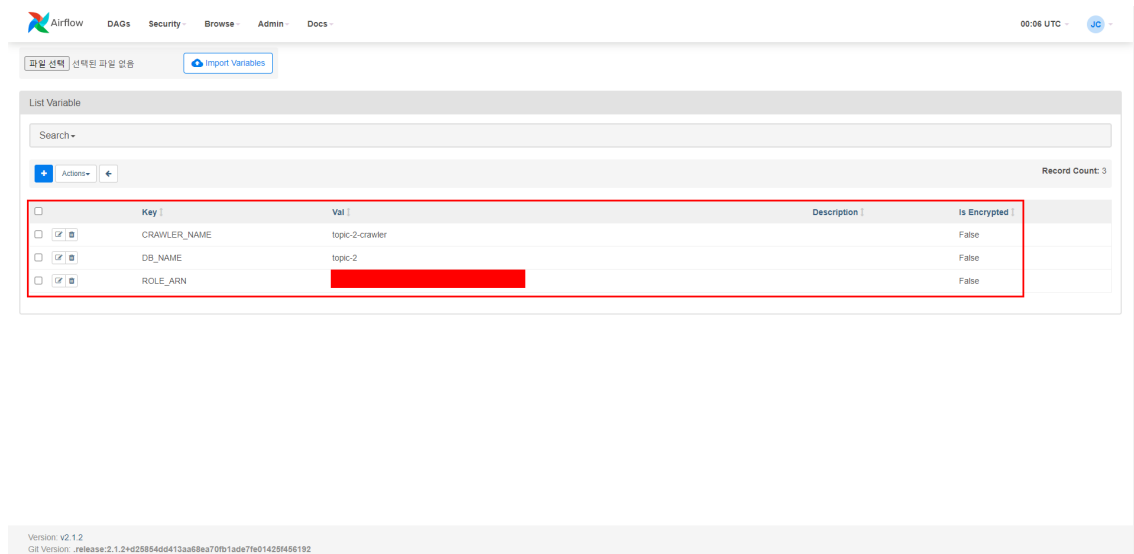
variable 은 Airflow에서 제공하는 Global 변수입니다. variable 사용은 Web UI에서 설정하는 방법과 DAG에서 Code 상으로 설정하는 방법 2가지가 있습니다.

### 1. Web UI에서 설정

상단 메뉴에서 Admin > Variables 로 접근



하단과 같이 등록됩니다.



### 2. Code로 등록

```
from airflow.models import Variable

def set_var(**kwargs):
    # Normal call style
    Variable.set("TEST", "set_var")

def get_var(**kwargs):
    get_var = Variable.get("TEST")
    print(get_var)
    get_var = {"new_var": "var_changed"}
    Variable.set("TEST", get_var)
```

```
def new_var(**kwargs):
    # Auto-deserializes a JSON value
    get_var = Variable.get("TEST", deserialize_json=True)
    print(type(get_var))
    # Returns the value of default_var (None) if the variable is not set
    new_var = Variable.get("TEST", default_var=None)
    print(type(new_var))
```

- `jinja template` 을 사용할 수도 있습니다.

```
from airflow.operators.bash_operator import BashOperator

# Raw value
print_set_var = BashOperator(
    task_id="print_set_var",
    bash_command="echo {{ var.value.TEST }}",
    dag=dag
)

# Auto-deserialize JSON value
print_get_var = BashOperator(
    task_id="print_get_var",
    bash_command="echo {{ var.json.TEST }}",
    dag=dag
)
```

이 `variable` 은 DAG 내부뿐만 DAG끼리 통신도 매개체로 사용할 수 있습니다.

예시 Code)

[Variable](#)

Airflow는 기본적으로 RBAC(Role Base Access Control)을 제공합니다. AWS에서 IAM User는 제공 받은 권한만 수행할 수 있듯이 Airflow도 계정을 생성 시 각 계정에 대한 권한, Role을 부여하고 Role에 따라 접근 제어를 합니다.

Airflow
DAGs
Security
Browse
Admin
Docs
OSSD UTC

List Roles

Search

Actions

Record Count: 5

	Name	Permissions
<input type="checkbox"/>		[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Profile, can read on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on Task Reschedules, menu access on Task Reschedules, can read on Passwords, can edit on Passwords, can create on Roles, can edit on Roles, can read on Users, can delete on Roles, can read on Permissions, can read on Roles, can edit on DAGs, can create on Users, can delete on Users, menu access on List Users, menu access on Security, menu access on Set Roles, can read on User Stats Chart, menu access on User's Statistics, menu access on Base Permissions, can read on View Menus, menu access on Views/Menus, can read on Permission Views, menu access on Permission on Views/Menus, can get on MenuApi, menu access on Configurations, can create on XComs, menu access on DAG Dependencies]
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Admin	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Op	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Public	[]
<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	User	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAGs, can read on DAGs]
<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Viewer	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can read on DAGs]

`Admin`은 AWS에서 `AdminFullAccess`와 동일하게 모든 권한을 가진 Role 입니다. 다른 Role에 권한을 부여할 수도 있고 모든 작업이 가능합니다.

**DAGs**

At 52 Active 21 Paused 31

x trigger

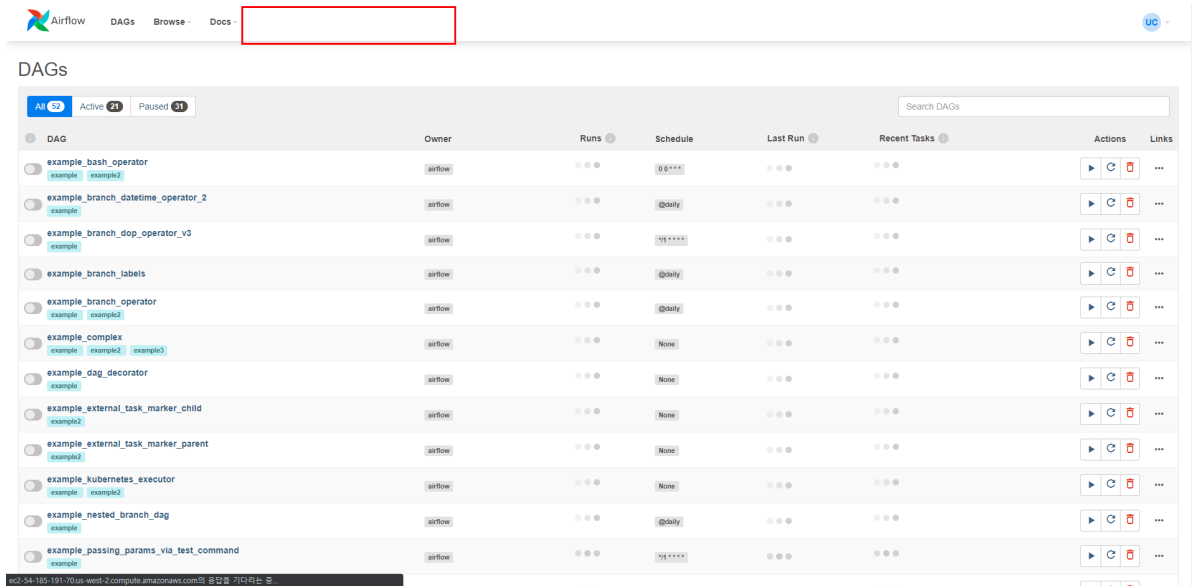
Search DAGs

DAG	Owner	Runs	Schedule	Last Run	Recent Tasks	Actions	Links
example_branch_operator example example2	airflow		@daily				...
example_branch_datetime_operator_2 example	airflow		@daily				...
example_branch_dop_operator_v3 example	airflow		@daily				...
example_branch_labels example	airflow		@daily				...
example_branch_operator example example2	airflow		@daily				...
example_complex example example2 example3	airflow		None				...
example_dag_decorator example	airflow		None				...
example_external_task_marker_child example2	airflow		None				...
example_external_task_marker_parent example2	airflow		None				...
example_kubernetes_executor example example2	airflow		None				...
example_nested_branch_dag example	airflow		@daily				...
example_passing_params_via_test_command example	airflow		@daily				...
example_python_operator example	airflow		@daily				...

## 2. User

`user` 는 `viewer` 가 가지고 있는 권한에 DAG와 Task를 실행 시킬 수 있는 권한이 추가로 있습니다.

```
airflow users create -r User -u user -p user12! -e user@gmail.com -f user -l choi
```



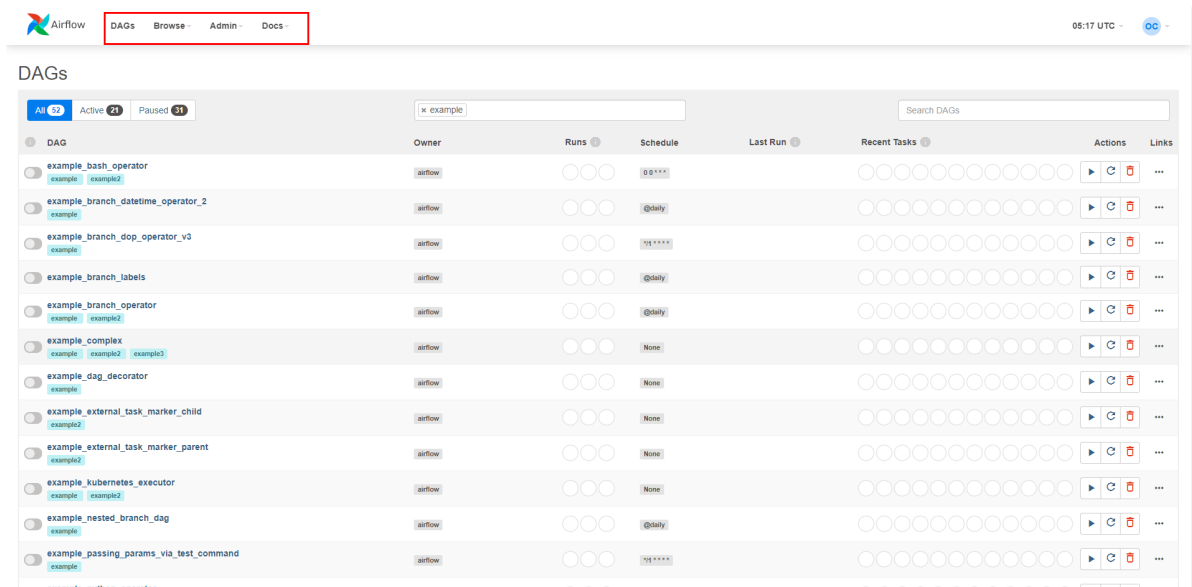
DAG	Owner	Runs	Schedule	Last Run	Recent Tasks	Actions	Links
example_bash_operator	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_datetime_operator_2	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_dop_operator_v3	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_labels	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_operator	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_complex	airflow	0	None			[Run] [Refresh] [Delete]	...
example_dag_decorator	airflow	0	None			[Run] [Refresh] [Delete]	...
example_external_task_marker_child	airflow	0	None			[Run] [Refresh] [Delete]	...
example_external_task_marker_parent	airflow	0	None			[Run] [Refresh] [Delete]	...
example_kubernetes_executor	airflow	0	None			[Run] [Refresh] [Delete]	...
example_nested_branch_dag	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_passing_params_via_test_command	airflow	0	@daily			[Run] [Refresh] [Delete]	...

상단 이미지와 같이 Resource 및 권한 관리에 대한 접근 제어를 하고 있습니다.

## 3. OP

`op` 는 `User` 권한에 Variable이나 Xcom과 같은 Resource 설정에 대한 권한이 추가로 있습니다.

```
airflow users create -r Op -u op -p admin12! -e op@gmail.com -f op -l choi
```



DAG	Owner	Runs	Schedule	Last Run	Recent Tasks	Actions	Links
example_bash_operator	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_datetime_operator_2	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_dop_operator_v3	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_labels	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_branch_operator	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_complex	airflow	0	None			[Run] [Refresh] [Delete]	...
example_dag_decorator	airflow	0	None			[Run] [Refresh] [Delete]	...
example_external_task_marker_child	airflow	0	None			[Run] [Refresh] [Delete]	...
example_external_task_marker_parent	airflow	0	None			[Run] [Refresh] [Delete]	...
example_kubernetes_executor	airflow	0	None			[Run] [Refresh] [Delete]	...
example_nested_branch_dag	airflow	0	@daily			[Run] [Refresh] [Delete]	...
example_passing_params_via_test_command	airflow	0	@daily			[Run] [Refresh] [Delete]	...

상단 이미지와 같이 `Op` Role을 가진 User는 Resource 관리나 DAG, Task 관리는 문제 없지만 권한 관리에 대한 접근 제어를 하고 있습니다.

## 4. Viewer

`viewer` DAG나 Task에 대한 접근 권한만 있습니다.

```
airflow users create -r viewer -u viewer -p admin12! -e viewer@gmail.com -f viewer -l choi
```

`viewer` 는 `user` 와 메뉴 탭은 동일하지만 각 DAG나 Task에 대해 View 기능만 가능하고 Edit 기능은 불가능합니다.

Edit이란 DAG나 Task에 대해 실행, 상태 변경 등을 의미합니다

## 5. Public

`Public` 은 권한이 없습니다.

```
airflow users create -r Public -u public -p admin12! -e public@gmail.com -f public -l choi
```



아무 권한이 없습니다.

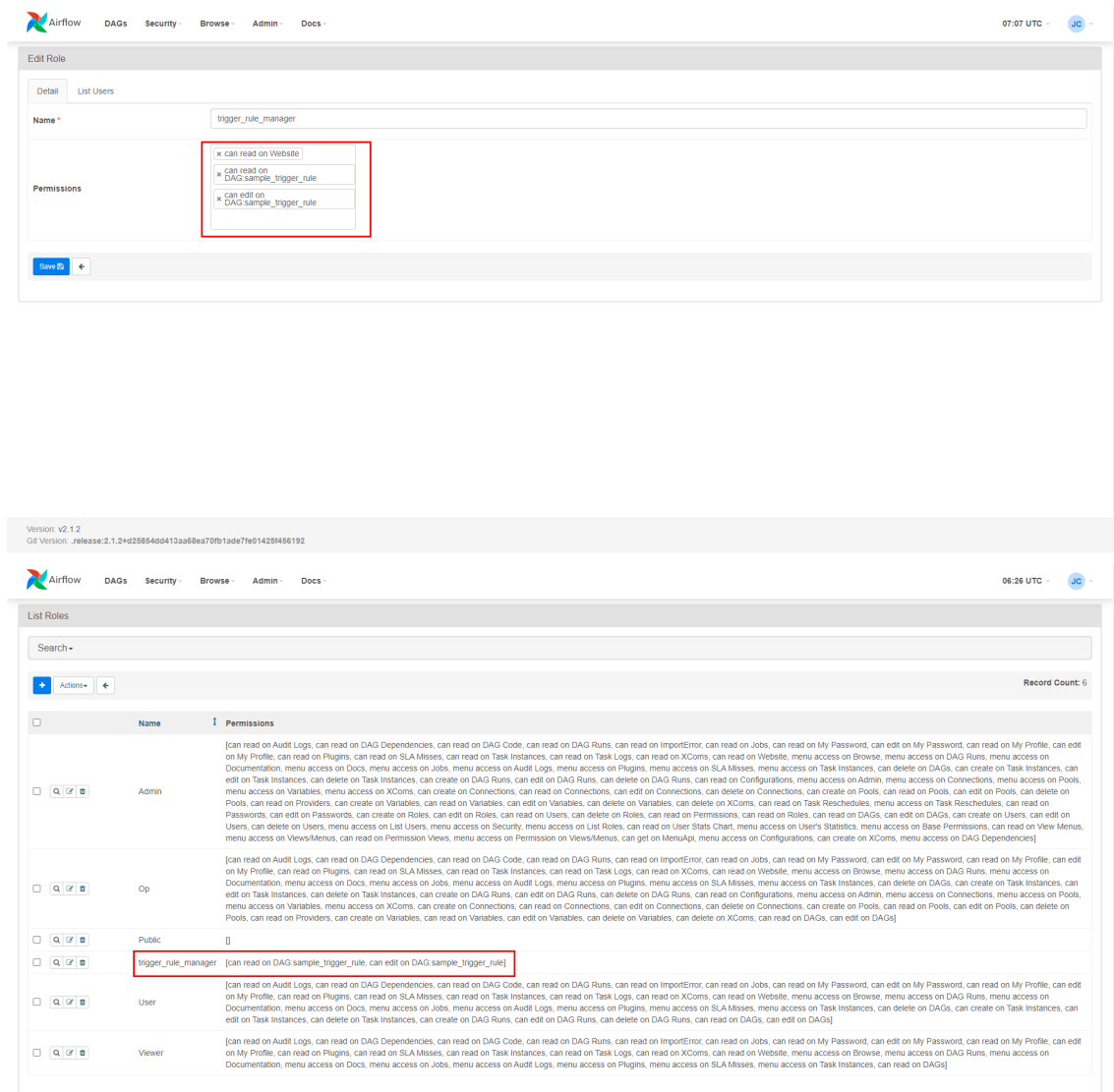
## 6. Custom Role

AWS에서 특정 권한을 가지 Role을 만들어 서비스에 부여할 수 있듯 Airflow에서도 Custom Role을 지원합니다.

특정 DAG만 접근하거나 특정 DAG만 실행할 수 있도록 Role을 생성 후 계정에 권한 부여할 수 있습니다.

Custom Role을 만드는 방법은 2 가지가 있습니다.

### 1. Web UI에서 생성



The image shows two screenshots of the Airflow Web UI. The top screenshot is the 'Edit Role' page for a role named 'trigger\_rule\_manager'. The 'Permissions' section is highlighted with a red box, showing three permissions: 'can read on Website', 'can read on DAG sample\_trigger\_rule', and 'can edit on DAG sample\_trigger\_rule'. The bottom screenshot is the 'List Roles' page, showing a table of roles. The 'trigger\_rule\_manager' role is highlighted with a red box, showing its permissions: 'can read on DAG sample\_trigger\_rule, can edit on DAG sample\_trigger\_rule'.

**Edit Role**

Name: trigger\_rule\_manager

Permissions:

- can read on Website
- can read on DAG sample\_trigger\_rule
- can edit on DAG sample\_trigger\_rule

**List Roles**

Name	Permissions
Admin	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on Task Reschedules, menu access on Task Reschedules, can read on Passwords, can edit on Passwords, can create on Roles, can edit on Roles, can read on Users, can delete on Roles, can read on Permissions, can read on Roles, can read on DAGs, can edit on DAGs, can create on Users, can edit on Users, can delete on Users, menu access on List Users, menu access on Security, menu access on List Roles, can read on User Stats Chart, menu access on User's Statistics, menu access on Base Permissions, can read on View Menu, menu access on Views/Menu, can read on Permission Views, menu access on Permission on Views/Menu, can get on MenuApi, menu access on Configurations, can create on XComs, menu access on DAG Dependencies]
Op	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
Public	[]
trigger_rule_manager	[can read on DAG sample_trigger_rule, can edit on DAG sample_trigger_rule]
User	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
Viewer	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLA Misses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLA Misses, menu access on Task Instances, can read on DAGs]

### 2. Airflow CLI로 생성

```
airflow roles create trigger_rule_manager
```



Airflow

DAGs
Security
Browse
Admin
Docs

06:54 UTC

List Roles

Search

+

Actions

+

Record Count: 6

	Name	Permissions
<input type="checkbox"/>		[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLAMisses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLAMisses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on Task Reschedules, menu access on Task Reschedules, can read on Passwords, can edit on Passwords, can create on Roles, can edit on Roles, can read on Users, can delete on Roles, can read on Permissions, can read on Roles, can read on DAGs, can edit on DAGs, can create on Users, can edit on Users, can delete on Users, menu access on List Users, menu access on Security, menu access on List Roles, can read on User Stats Chart, menu access on User's Statistics, menu access on Base Permissions, can read on View Menu, menu access on Views/Menus, can read on Permission Views, menu access on Permission on Views/Menus, can get on MenuApi, menu access on Configurations, can create on XComs, menu access on DAG Dependencies]
<input type="checkbox"/>	Admin	
<input type="checkbox"/>	Op	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLAMisses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLAMisses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
<input type="checkbox"/>	Public	[]
<input type="checkbox"/>	trigger_rule_manager	[]
<input type="checkbox"/>	User	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLAMisses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLAMisses, menu access on Task Instances, can delete on DAGs, can create on Task Instances, can edit on Task Instances, can delete on Task Instances, can create on DAG Runs, can edit on DAG Runs, can delete on DAG Runs, can read on Configurations, menu access on Admin, menu access on Connections, menu access on Pools, menu access on Variables, menu access on XComs, can create on Connections, can read on Connections, can edit on Connections, can delete on Connections, can create on Pools, can read on Pools, can edit on Pools, can delete on Pools, can read on Providers, can create on Variables, can read on Variables, can edit on Variables, can delete on Variables, can delete on XComs, can read on DAGs, can edit on DAGs]
<input type="checkbox"/>	Viewer	[can read on Audit Logs, can read on DAG Dependencies, can read on DAG Code, can read on DAG Runs, can read on ImportError, can read on Jobs, can read on My Password, can edit on My Password, can read on My Profile, can edit on My Profile, can read on Plugins, can read on SLAMisses, can read on Task Instances, can read on Task Logs, can read on XComs, can read on Website, menu access on Browse, menu access on DAG Runs, menu access on Documentation, menu access on Docs, menu access on Jobs, menu access on Audit Logs, menu access on Plugins, menu access on SLAMisses, menu access on Task Instances, can read on DAGs]

하지만 말그대로 Role 만 생성하고 권한은 부여되지 않습니다.

생성한 Role을 이용하여 계정을 생성합니다.

계정 생성 방법도 2가지가 있습니다.

## 1. Web UI에서 생성

상단 메뉴에서 **Security** > **List Users** 로 접근

The screenshot shows the Apache Airflow web interface. The top navigation bar includes 'Airflow', 'DAGs', 'Security', 'Browse', 'Admin', and 'Docs'. The 'Security' menu is open, showing options like 'List Users', 'List Roles', 'Users Statistics', 'Base Permissions', 'Views/Menus', and 'Permission on Views/Menus'. The 'List Users' option is selected, leading to the 'List Users' page. This page has a search bar and a table of users. A red box highlights the '+ Add User' button in the top left of the table area.

	First Name	Last Name	User Name	Email	Is Active?	Role
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q
<input type="checkbox"/>	Q	Q	Q	Q	Q	Q

위에서 생성한 Role을 Mapping해줍니다

The screenshot shows the 'Add User' form in the Apache Airflow web interface. The form includes fields for 'First Name', 'Last Name', 'User Name', 'Email', 'Role', 'Password', and 'Confirm Password'. The 'Role' field is highlighted with a red box, showing the selected role 'trigger\_rule\_manager'. The 'Is Active?' checkbox is checked.

Airflow DAGs Security Browse Admin Docs 07:02 UTC

List Users

Search

Record Count: 7

	First Name	Last Name	User Name	Email	Is Active?	Role
<input type="checkbox"/>	jungmin	choi	jungmin	candy7manner@gmail.com	True	[Admin]
<input type="checkbox"/>	admin	choi	admin	admin@gmail.com	True	[Admin]
<input type="checkbox"/>	user	choi	user	user@gmail.com	True	[User]
<input type="checkbox"/>	op	choi	op	op@gmail.com	True	[Op]
<input type="checkbox"/>	viewer	choi	viewer	viewer@gmail.com	True	[Viewer]
<input type="checkbox"/>	public	choi	public	public@gmail.com	True	[Public]
<input type="checkbox"/>	manager	trigger_rule	triggerrule	triggerrule@gmail.com	True	[trigger_rule_manager]

Version: v2.1.2  
Git Version: .release:2.1.2+cd25854d413aa68ea70fb1ade7fa01428f456192

생성한 계정으로 로그인 합니다.

Airflow DAGs 07:07 UTC

DAGs

Filter DAGs by tag Search DAGs

DAG	Owner	Runs	Schedule	Last Run	Recent Tasks	Actions	Links
sample_trigger_rule	jungmin	...	None	...	...	▶ ↺ ⏏	...

Showing 1-1 of 1 DAGs

Version: v2.1.2  
Git Version: .release:2.1.2+cd25854d413aa68ea70fb1ade7fa01428f456192

말 그대로 DAG에 대한 Code 정보 외에 DAG 실행 이력 등 그 어떤 것도 확인할 수 없습니다.

## 2. Airflow CLI로 생성

```
airflow users create -r trigger_rule_manager -u triggerrule -p admin12! -e triggerrule@gmail.com -f manager -l trigger_rule
```

최초 매핑한 Role 외에도 추가로 Role을 Mapping 시킬 수도 Role을 변경할 수도 있습니다.

[추가 사항](#)은 해당 링크에서 더 볼 수 있습니다.

## 4. Connections

Airflow는 외부 시스템과의 통신을 위해서 Connection을 맺어야 합니다. ( AWS, AZURE, GCP, DBMS etc...)

이러한 Connection 정보를 등록할 수 있는 기능입니다.

Connection을 설정 및 생성 하는 방법은 2가지가 있습니다.

### 1. Web UI에서 생성

상단 메뉴에서 Admin > Connections 로 접근

The image displays three screenshots from the Airflow web interface. The first screenshot shows the 'Admin' menu with 'Connections' highlighted. The second screenshot shows the 'List Connection' page with a table of existing connections. The third screenshot shows the 'Add Connection' form with fields for Conn Id, Conn Type, Description, Host, Schema, Login, Password, Port, and Extra.

**List Connection Table:**

Conn Id	Conn Type	Description	Host	Port	Is Encrypted	Is Extra Encrypted
airflow_db	mysql		mysql		False	False
aws_default	aws				False	False
azure_batch_default	azure_batch				False	False
azure_cosmos_default	azure_cosmos				False	False
azure_data_explorer_default	azure_data_explorer		https://<CLUSTER>.kusto.windows.net		False	False
azure_data_lake_default	azure_data_lake				False	False
azure_default	azure				False	False
cassandra_default	cassandra		cassandra	9042	False	False
databricks_default	databricks		localhost		False	False
dingding_default	http				False	False
druid_broker_default	druid		druid-broker	8082	False	False
druid_ingest_default	druid		druid-overlord	8081	False	False
elasticsearch_default	elasticsearch		localhost	9200	False	False
emr_default	emr				False	False
facebook_default	facebook_social				False	False
fs_default	fs				False	False

**Add Connection Form:**

Conn Id: aws\_conn

Conn Type: Amazon Web Services

Description:

Host:

Schema:

Login:

Password:

Port:

Extra: { "region\_name": "us-west-2" }

Airflow DAGs Security Browse Admin Docs 08:14 UTC

Added Row

List Connection

Search

Actions

Record Count: 50

	Conn Id	Conn Type	Description	Host	Port	Is Encrypted	Is Extra Encrypted
<input type="checkbox"/>	airflow_db	mysql		mysql		False	False
<input type="checkbox"/>	aws_conn	aws				False	False
<input type="checkbox"/>	aws_default	aws				False	False
<input type="checkbox"/>	azure_batch_default	azure_batch				False	False
<input type="checkbox"/>	azure_cosmos_default	azure_cosmos				False	False
<input type="checkbox"/>	azure_data_explorer_default	azure_data_explorer		https://<CLUSTER>-kusto.windows.net		False	False
<input type="checkbox"/>	azure_data_lake_default	azure_data_lake				False	False
<input type="checkbox"/>	azure_default	azure				False	False
<input type="checkbox"/>	cassandra_default	cassandra		cassandra	9042	False	False
<input type="checkbox"/>	databricks_default	databricks		localhost		False	False
<input type="checkbox"/>	dingding_default	http				False	False
<input type="checkbox"/>	druid_broker_default	druid		druid-broker	8082	False	False
<input type="checkbox"/>	druid_ingest_default	druid		druid-overlord	8081	False	False
<input type="checkbox"/>	elasticsearch_default	elasticsearch		localhost	9200	False	False
<input type="checkbox"/>	emr_default	emr				False	False

현재 이 Airflow는 EC2 위에 구성이 되었으며 EC2의 Instance Profile에 IAM Role을 Mapping 시켜 놔기 때문에 Extras에

```
{
  "region_name": "us-west-2"
}
```

이 내용만 작성해도 Connection 이 맺어집니다.

개인 Accesskey로 Connection을 설정할 경우 하단과 같은 형태로 작성해주어야 Connection 이 맺어집니다.

```
{
  "aws_access_key_id": "{your_aws_access_key_id}",
  "aws_secret_access_key": "{your_aws_secret_access_key}"
  "region_name": "{your_aws_region_name}",
  "output": "{output_format}"
}
```

## 2. Airflow CLI로 생성

```
airflow connections add aws_conn --conn-description "AWS Connection On Airflow" --conn-extra '{"region_name": "us-west-2"}' --conn-type aws
```

Edit Connection

Conn Id *	aws_conn
Conn Type *	Amazon Web Services <small>Conn Type missing? Make sure you've installed the corresponding Airflow Provider Package.</small>
Description	AWS Connection On Airflow
Host	
Schema	
Login	
Password	
Port	
Extra	{"region_name": "us-west-2"}

Save &

# 과제

---

## 주제 1

지난 과제에서 S3 + DynamoDB DAG 구성한 팀

1. AWS Connection 생성
2. S3에서 Data File을 Download 받고 Upload하는 내용을 `S3Hook` 으로 변경
3. 해당 DAG에만 `Read` 및 `Edit` 할 수 있는 Role 생성
4. 기존 Champion 확인 용 계정을 3 번에서 생성한 Role로 바꿀 것

상단의 내용을 정리한 문서와 Code 제출

## 주제 2

지난 과제에서 S3 + Glue DAG 구성한 팀

1. AWS Connection 생성
2. Glue Job을 생성 및 실행, 상태체크하는 내용을 `AwsGlueJobOperator`, `AwsGlueJobSensor` 로 변경
3. 해당 DAG에만 `Read` 및 `Edit` 할 수 있는 Role 생성
4. 기존 Champion 확인 용 계정을 3 번에서 생성한 Role로 바꿀 것

상단의 내용을 정리한 문서와 Code 제출