

How to use Taiwan Computing Cloud?

Train YOLOv9 as an example

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Content

1. User interface of TWCC
2. Preparation of YOLOv9 and Dataset
3. Interactive container
4. Scheduled container
5. How to download files from TWCC
6. Query existing Interactive containers and delete them

1. User interface of TWCC

You can view storage and resource usage here.
(For PPT page19)

The screenshot shows the TWCC (Taiwan Computing Cloud) user interface. At the top, there is a navigation bar with the TWCC logo, a dropdown menu for '整合方向性YOLOV...', a 'SERVICES' dropdown, and a user profile for '余紫綾'. Below the navigation bar, the main content area is divided into two main sections: 'Project Information' and 'TWCC Services'.

Project Information

This section displays personal information and credit details:

- User Profile:** 余紫綾 (Tenant User) with a blue user icon.
- Credit Information:** Personal Available Credits: 6,831. Duration: [REDACTED]. System Code: [REDACTED]. Wallet Type: 母錢包. Wallet Owner: 陳世興.
- Information:** Please refer to iService for more detailed and accurate information.
- View Details >** A button with a red border pointing to the right.

TWCC Services

This section includes:

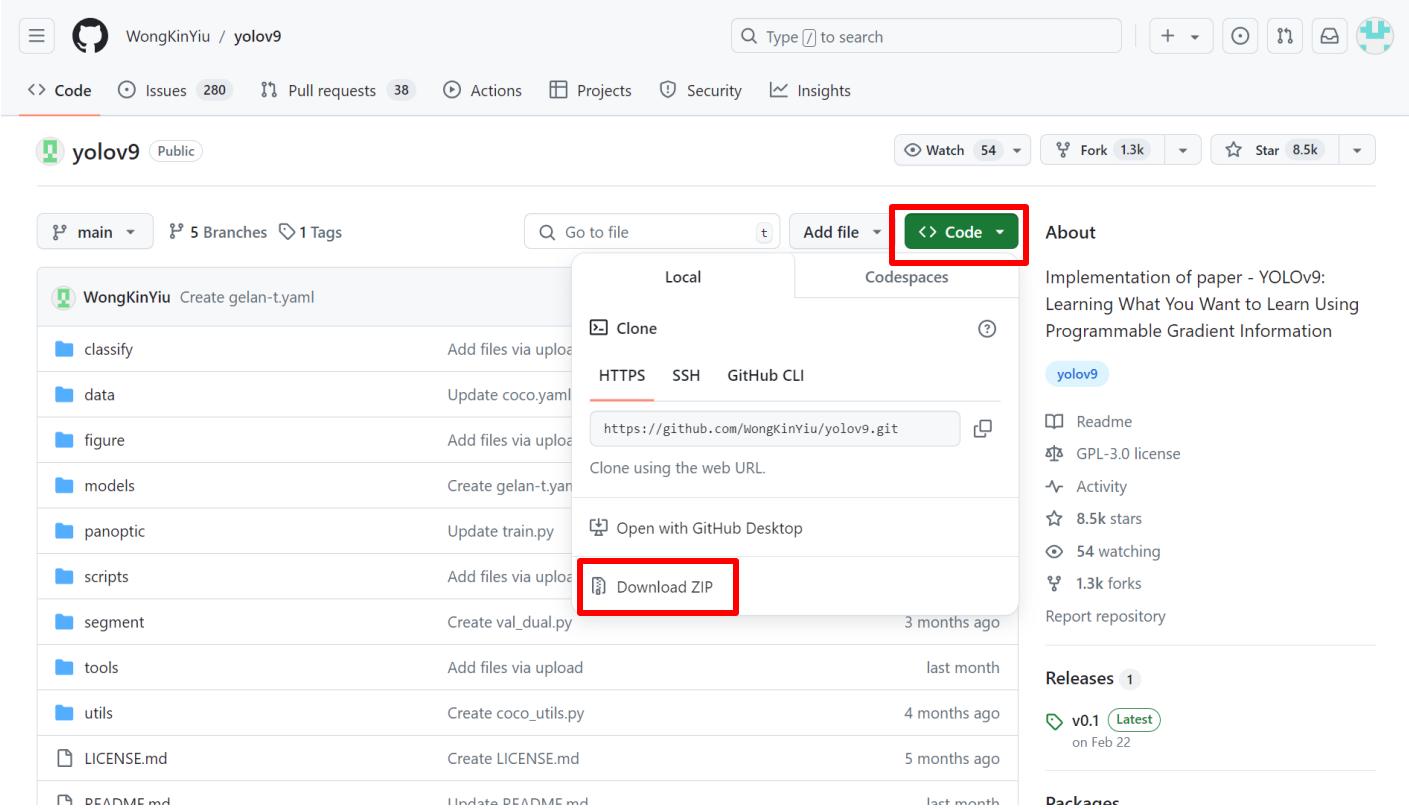
- My Favorite Services:** A placeholder message: You have no favorite service now. Add favorites by clicking on the star next to the service name.
- All Services:** A list of service categories with corresponding icons and stars:
 - Compute: Interactive Container
 - Storage: Cloud Object Storage
 - Networking & Security: Virtual Network
 - Artificial Intelligence: OneAI

2. Preparation of YOLOv9 and Dataset

- We use YOLOv9 as an example, which is a well-known object detection algorithm
- Roboflow provides extensive datasets in image classification, object detection, segmentation, and so on.

2.1 Download YOLOv9 from GitHub

Download yolov9 in zip form.
<https://github.com/WongKinYiu/yolov9>



The screenshot shows the GitHub repository page for 'yolov9' by 'WongKinYiu'. The repository has 280 issues, 38 pull requests, and 1.3k forks. The 'Code' dropdown menu is open, showing options for 'Local' and 'Codespaces', and a 'Clone' section with 'HTTPS', 'SSH', and 'GitHub CLI' links. A red box highlights the 'Code' dropdown. Below it, a red box highlights the 'Download ZIP' button, which is located under the 'Clone' section. The repository description mentions 'Implementation of paper - YOLOv9: Learning What You Want to Learn Using Programmable Gradient Information'. The sidebar on the right shows statistics like 8.5k stars and 54 watching.

WongKinYiu / yolov9

Type ⌥ to search

Code Issues 280 Pull requests 38 Actions Projects Security Insights

yolov9 Public Watch 54 Fork 1.3k Star 8.5k

main 5 Branches 1 Tags Go to file Add file Code

WongKinYiu Create gelan-t.yaml

classify Add files via upload

data Update coco.yaml

figure Add files via upload

models Create gelan-t.yaml

panoptic Update train.py

scripts Add files via upload

segment Create val_dual.py

tools Add files via upload

utils Create coco_utils.py

LICENSE.md Create LICENSE.md

README.md Update README.md

Local Codespaces

Clone

HTTPS SSH GitHub CLI

https://github.com/WongKinYiu/yolov9.git

Clone using the web URL.

Open with GitHub Desktop

Download ZIP

About

Implementation of paper - YOLOv9: Learning What You Want to Learn Using Programmable Gradient Information

yolov9

Readme

GPL-3.0 license

Activity

8.5k stars

54 watching

1.3k forks

Report repository

Releases 1

v0.1 Latest on Feb 22

Darkenes

2.2 Object Detection Dataset

- A football player dataset from <https://universe.roboflow.com/roboflow-jvuqo/football-players-detection-3zvbc/dataset/20>

The screenshot shows the Roboflow Universe interface for a specific dataset version. On the left, there's a sidebar with navigation links like 'Back', 'Overview', 'Dataset' (which is selected), and 'Analytics'. The main content area is titled 'Versions' and lists several models:

- rf-det-m** (selected): v20, 372 images, Medium. This row has a red box around the 'Download Dataset' button.
- yolo1m**: v19, 372 images, Medium. Includes a COCOm link.
- rf-det-s**: v18, 372 images, Small. Includes a COCOm link.
- yolo1ls**: v17, 372 images, Accurate. Includes a COCOS link.
- rf-det-n**: v16, 372 images, Nano. Includes a COCOn link.
- yolo1In**: v15, 372 images, Fast. Includes a COCOn link.

Below the versions, it says '372 Total Images' and shows a grid of thumbnail images. There are also buttons for 'View All Images' and 'CreateML JSON'.

At the bottom, the 'Dataset Split' is shown:

- TRAIN SET**: 298 Images (88%)
- VALID SET**: 49 Images (13%)
- TEST SET**: 25 Images (7%)

At the very bottom, the date and time are listed: 2025-03-27 5:42am.

3. Interactive container

Click on development container

The screenshot shows the TWCC (Taiwan Computing Cloud) Services interface. At the top, there is a navigation bar with the TWCC logo, a dropdown menu for '整合方向性YOLOV...', a 'SERVICES' dropdown, and user profile information for '余紫綾'. Below the navigation bar, there is a message: 'Please refer to iService for more detailed and accurate information.' with a 'VIEW DETAILS >' button. The main content area is titled 'TWCC Services' and contains two sections: 'My Favorite Services' and 'All Services'. The 'My Favorite Services' section is currently empty, displaying a message: 'You have no favorite service now. Add favorites by clicking on the star next to the service name.' The 'All Services' section is divided into four categories: Compute, Storage, Networking & Security, and Artificial Intelligence. The 'Compute' category contains the following services: Interactive Container (highlighted with a red box), Virtual Compute Service, Scheduled Container, and HPC Job. The 'Storage' category contains: Cloud Object Storage, Cloud File Service, and Virtual Disk Service. The 'Networking & Security' category contains: Virtual Network, Load Balancing Service, and Auto Scaling. The 'Artificial Intelligence' category contains: OneAI and AI²CS.

Compute		Storage		Networking & Security		Artificial Intelligence	
 Interactive Container		 Cloud Object Storage		 Virtual Network		 OneAI	
 Virtual Compute Service		 Cloud File Service		 Load Balancing Service		 AI ² CS	
 Scheduled Container		 Virtual Disk Service		 Auto Scaling			
 HPC Job							

3. Interactive container

Since yolov9 uses PyTorch for image recognition, we chose PyTorch.

The screenshot shows the TWCC (Taiwan Computing Cloud) interface for creating an interactive container. The left sidebar has links for 'Interactive Container' (which is active), 'Image Request History', 'Image', and 'Monitoring'. The main area title is 'Create Interactive Container' with a subtitle 'Choose Image Type'. A search bar says 'Search Name'. Below it, 'Recent Used' shows 'PyTorch' and 'TensorFlow'. The 'Image Type' section lists several options: 'TensorFlow' (selected), 'PyTorch' (highlighted with a red box), 'CUDA', 'Matlab (BYOL)', 'TensorRT', and 'Triton Inference Server(TensorRT)'. Each option has a brief description and a help icon.

Image Type	Description
TensorFlow	TWCC provides pay-as-you-go working environment of NGC optimized Tensorflow. TensorFlow is an open source software libra...
PyTorch	TWCC provides pay-as-you-go working environment of NGC optmized PyTorch. PyTorch is a GPU accelerated tensor computation...
CUDA	TWCC provides pay-as-you-go working environment of NGC's CUDA. CUDA® is a parallel computing platform and application pr...
Matlab (BYOL)	TWCC provides pay-as-you-go working environment of [NGC optimized MATLAB](https://man.twcc.ai/@twccdocs/ccs-concept-imag...)
TensorRT	TWCC provides pay-as-you-go working environment of NGCs TensorRT. NVIDIA TensorRT is a C++ library that facilitates high...
Triton Inference Server(TensorRT)	TWCC provides pay-as-you-go working environment of NGCs TensorRT Inference Server. The TensorRT inference server provide...

3. Interactive container

The latest version of the image file is not necessarily the most suitable for yolov9 , but **pytorch-22.08-py3:latest** is currently the most suitable, so this version is selected.

For yolov5, one GPU model is enough for detection, so the **cm.super** model is selected.

REVIEW & CREATE

Type	GPUs ↑ (Pcs)	CPU Cores (Cores)	Memory (GB)	Shared Memory (GB)	Cost Estimate (NTD/Hour)
c.super	1	4	90	-	86.10 NTD / Hour
cm.super	1	4	60	30	86.10 NTD / Hour

Open Jupyter, we can use Jupyter to upload the data and input commands required for yolov9 recognition.

3. Interactive container

The screenshot shows the TWCC (Taiwan Computing Cloud) interface for managing interactive containers. The top navigation bar includes the TWCC logo, a search bar, and dropdown menus for SERVICES and user profile. The main content area displays the 'Interactive Container Details' page for a specific container.

Interactive Container Details

CONFIGURATIONS **MONITORING**

Basics

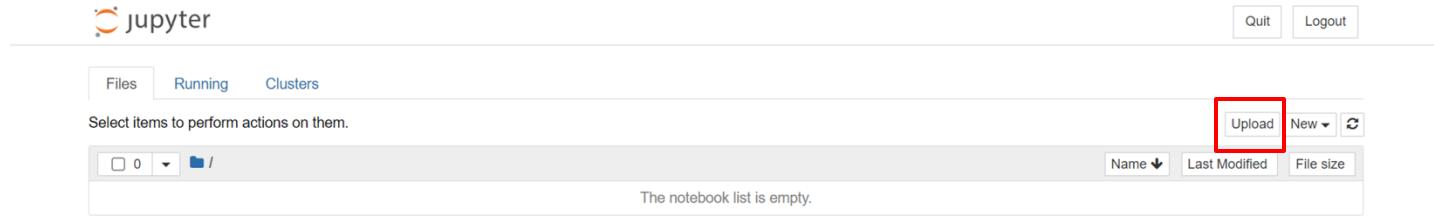
ID	4748322	Image	pytorch-22.08-py3:latest
Name	ctr1719197267292	Deletion Protection	Locked
Description		State	Ready
Basic Configuration	1 GPU + 04 cores + 060GB memory + 030GB share memory	Log	CONTAINER LOGS

Networks & Connection [How to SSH into a Container](#)

Name	cc72nkctr1719197267292	Jupyter	LAUNCH
Network Type	LoadBalancer	SSH	ASSOCIATE DISSOCIATE
Public IP	203.145.216.206	Service Port	ssh://u1513733@203.145.216.206 -p 58152
Port	Target Port: 22 (ssh)		

A red box highlights the 'LAUNCH' button under the Jupyter section, and a red arrow points from this button to a callout box containing the text: **For PPT page28
YOUR_ACCOUNT**. Another red box highlights the URL in the service port column: [ssh://u1513733@203.145.216.206 -p 58152](#).

3. Interactive container



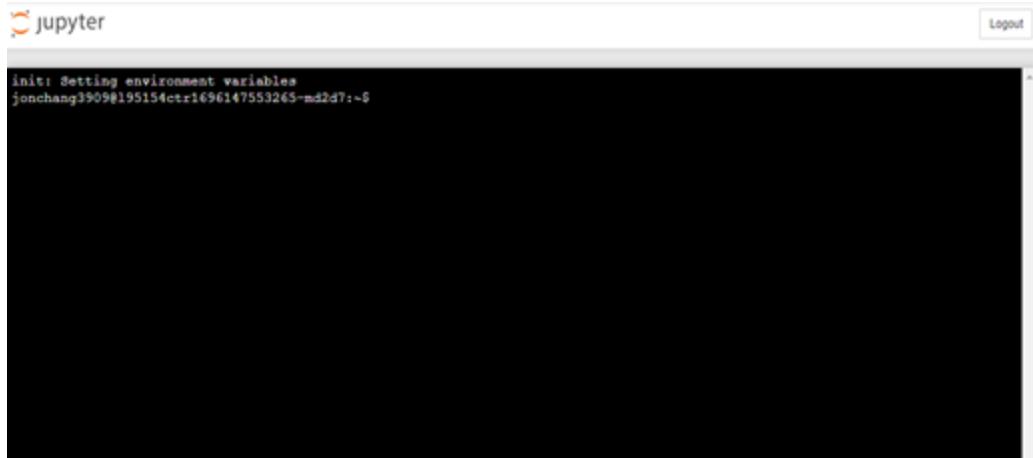
Upload yolov9-main.zip and dataset

3. Interactive container

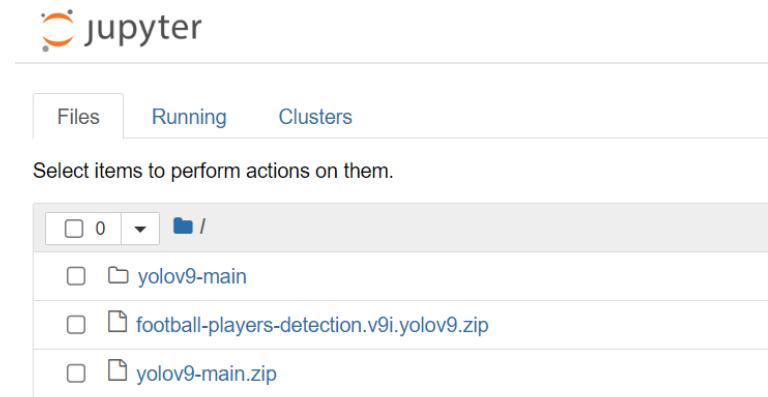


Open the terminal

3. Interactive container



```
jupyter
init: Setting environment variables
jonchang3909@195:154:ctrl169:6147553265~$
```



You can enter your commands here.

Unzip yolov9-main.zip and dataset.zip

- unzip yolov9-main.zip
- unzip YOUR_DATASET.zip -d ~/yolov9-main

3. Interactive container

- What is the content of data.yaml?
- A relative path of the three folders. Please modify the ../ to ./

jupyter data.yaml ✓ 2023年12月21日

File Edit View Language

```
1 train: ../train/images
2 val: ./valid/images
3 test: ./test/images
4
5 nc: 4
6 names: ['ball', 'goalkeeper', 'player', 'referee']
7
8 roboflow:
9   workspace: roboflow-jvuqo
10  project: football-players-detection-3zvbc
11  version: 2
12  license: CC BY 4.0
13  url: https://universe.roboflow.com/roboflow-jvuqo/
```

File Edit View Language

```
1 train: ./train/images
2 val: ./valid/images
3 test: ./test/images
4
5 nc: 4
6 names: ['ball', 'goalkeeper', 'player', 'referee']
7
8 roboflow:
9   workspace: roboflow-jvuqo
10  project: football-players-detection-3zvbc
11  version: 2
12  license: CC BY 4.0
13  url: https://universe.roboflow.com/roboflow-jvuqo/
```

3. Interactive container

Install the packages required for identification and then train the model

- cd ~/yolov9-main
- wget -P ./weights -q <https://github.com/WongKinYiu/yolov9/releases/download/v0.1/yolov9-c.pt>
- wget -P ./weights -q <https://github.com/WongKinYiu/yolov9/releases/download/v0.1/yolov9-e.pt>
- wget -P ./weights -q <https://github.com/WongKinYiu/yolov9/releases/download/v0.1/gelan-c.pt>
- wget -P ./weights -q <https://github.com/WongKinYiu/yolov9/releases/download/v0.1/gelan-e.pt>

```
u1513733@gvns8xctr1720416049770-gt28n:~$  
u1513733@gvns8xctr1720416049770-gt28n:~$  
u1513733@gvns8xctr1720416049770-gt28n:~$ cd ~/yolov9-main  
u1513733@gvns8xctr1720416049770-gt28n:~/yolov9-main$ wget -P ./weights -q https://github.com/WongKinYiu/yolov9/releases/dow  
nload/v0.1/gelan-c.pt  
--2024-07-08 13:55:23-- http://xn--q-5gn/  
Resolving xn--q-5gn (xn--q-5gn)... failed: Name or service not known.  
wget: unable to resolve host address 'xn--q-5gn'  
--2024-07-08 13:55:23-- https://github.com/WongKinYiu/yolov9/releases/download/v0.1/gelan-c.pt  
Resolving github.com (github.com)... 20.27.177.113  
Connecting to github.com (github.com) |20.27.177.113|:443... connected.
```

3. Interactive container

Install the packages required for identification and then train the model

- sudo apt-get update && sudo apt-get install libgll1 -y && pip install seaborn && python train.py --batch 64 --epochs 5 --img 416 --device 0 --min-items 0 --close-mosaic 15 --data ./data.yaml --weights ./weights/gelan-c.pt --cfg models/detect/gelan-c.yaml --hyp hyp.scratch-high.yaml

```
u1513733@gvns8xctr1720416049770-gt28n:~/yolov9-main$ sudo apt-get update && sudo apt-get install libgll1 -y && python train.py --batch 64 --epochs 5 --img 416 --device 0 --min-items 0 --close-mosaic 15 --data ./data.yaml --weights ./weights/gelan-c.pt --cfg models/detect/gelan-c.yaml --hyp hyp.scratch-high.yaml
Hit:1 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu focal InRelease
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Hit:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 128 kB in 2s (68.3 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
libgll1 is already the newest version (1.3.2-1~ubuntu0.20.04.2).
0 upgraded, 0 newly installed, 0 to remove and 164 not upgraded.
train: weights=./weights/gelan-c.pt, cfg=models/detect/gelan-c.yaml, data=./data.yaml, hyp=hyp.scratch-high.yaml, epochs=5,
```

3. Interactive container

```
Validating runs/train/exp4/weights/best.pt...
Fusing layers...
gelan-c summary: 387 layers, 25230172 parameters, 0 gradients, 101.8 GFLOPs
    Class      Images   Instances       P        R     mAP50   mAP50-95: 100% |████████| 1/1 00:00
        all        43      1025     0.711     0.204     0.186     0.101
        ball       43        39        1         0         0         0
        goalkeeper 43        32        1         0         0         0
        player      43      853     0.634     0.798     0.708     0.384
        referee     43       101     0.209     0.0184    0.037     0.0209
Results saved to runs/train/exp4
u1513733@gvns8xctr1720416049770-gt28n:~/yolov9-main$
```

Training result storage location

Compressed archive

- sudo apt-get install zip gzip tar && zip -r YOLODemo1.zip /home/**YOUR_ACCOUNT**/yolov9-main/runs/train/**exp4**

```
u1513733@gvns8xctr1720416049770-gt28n:~$ sudo apt-get install zip gzip tar && zip -r YOLODemo1.zip /home/u1513733/yolov9-main/runs/train/exp4
Reading package lists... Done
Building dependency tree
Reading state information... Done
zip is already the newest version (3.0-11build1).
```

3. Interactive container



The screenshot shows a Jupyter Notebook interface with a file browser. The 'Files' tab is selected. The toolbar includes 'Duplicate', 'Rename', 'Move', 'Download' (which is highlighted with a red box), 'View', 'Edit', and a trash icon. On the right, there are 'Upload', 'New', and a refresh icon. The file list shows:

	Name	Last Modified	File size
<input type="checkbox"/>	yolov9-main	4 分鐘前	
<input type="checkbox"/>	football-players-detection.v9i.yolov9.zip	4 天前	72.3 MB
<input checked="" type="checkbox"/>	YOLODemo1.zip	3 分鐘前	478 MB
<input type="checkbox"/>	yolov9-main.zip	4 天前	2.32 MB

Check and download the results of completed training

3. Interactive container

The screenshot shows the TWCC (Taiwan Computing Cloud) Interactive Container Management page. The left sidebar has a dark theme with white text and icons. It includes links for 'Interactive Container' (selected), 'Image Request History', 'Image', and 'Monitoring'. The main content area has a light gray background. At the top, there's a breadcrumb navigation: Home > Interactive Container. Below it is the title 'Interactive Container Management' with a 'Learn more' link. There are three buttons: '+ CREATE' (blue), 'DELETE' (gray), and 'REFRESH' (light blue). A search bar with a magnifying glass icon and placeholder 'Search' is below. A table lists one item: 'ctr1719197267292'. The columns are: ID (checkbox), Name, Public IP, State, Delete protection, Created at, and Created by. The row shows: 4748322, ctr1719197267292, 203.145.216.206, Ready (green dot), lock icon, 2024-06-24 10:49:31, 余紫綏, and a vertical ellipsis icon. To the right of the table is a red-bordered 'DELETE' button. The bottom of the table has navigation arrows and a page number '1 / 1'.

ID	Name	Public IP	State	Delete protection	Created at	Created by
4748322	ctr1719197267292	203.145.216.206	Ready	🔒	2024-06-24 10:49:31	余紫綏

Most important don't forget to delete the container after you finished!!!

4. Scheduled container

Click on the task container

The screenshot shows the TWCC (Taiwan Computing Cloud) Services dashboard. At the top, there is a navigation bar with the TWCC logo, a dropdown menu for '整合方向性YOLOV...', a 'SERVICES' dropdown, and user profile information for '余紫綾'. Below the navigation bar, a message box says 'Please refer to iService for more detailed and accurate information.' with a 'VIEW DETAILS >' button. The main content area is titled 'TWCC Services'.

My Favorite Services: A section with a dashed border containing the message 'You have no favorite service now. Add favorites by clicking on the star next to the service name.'

All Services: A grid of service icons categorized into Compute, Storage, Networking & Security, and Artificial Intelligence.

Compute	Storage	Networking & Security	Artificial Intelligence
Interactive Container	Cloud Object Storage	Virtual Network	OneAI
Virtual Compute Service	Cloud File Service	Load Balancing Service	AI ² CS
Scheduled Container	Virtual Disk Service	Auto Scaling	
HPC Job			

The 'Scheduled Container' service icon is highlighted with a red rectangular box.

4. Scheduled

The screenshot shows the TWCC web interface for creating a scheduled container. The top navigation bar includes the TWCC logo, a search bar, and service links. The main page title is 'Create Scheduled Container'. The form has four tabs: 'BASICS' (selected), 'STORAGE', 'SCHEDULE', and 'REVIEW & CREATE'. The 'BASICS' tab contains fields for 'Name' (job1720422535086), 'Image' (pytorch-22.08-py3), 'Basic Configuration' (with a dropdown menu showing 'All Types' and a table of compute types), and 'Command' (echo Hello World!). The 'Basic Configuration' table data is as follows:

Type	GPUs ↑ (Pcs)	CPU Cores (Cores)	Memory (GB)	Cost Estimate (NTD/Hour)
c.super	1	4	90	86.10 NTD / Hour
cm.super	1	4	60	86.10 NTD / Hour
c.xsuper	2	8	180	172.20 NTD / Hour
cm.xsuper	2	8	120	172.20 NTD / Hour
c.2xsuper	4	16	360	344.40 NTD / Hour

At the bottom of the form are buttons for 'REVIEW & CREATE', 'BACK', 'NEXT : STORAGE>', and 'CANCEL'.

After setting your parameters enter your commands here

You have to manually start the container

4. Scheduled container

The screenshot shows the TWCC (Taiwan Computing Cloud) web interface for managing scheduled containers. The top navigation bar includes the TWCC logo, a dropdown menu for services, and user information for '余紫綾'. On the left, a sidebar has 'Scheduled Container' selected. The main content area is titled 'Scheduled Container Management' with a 'Learn more' link. It features a search bar and four action buttons: '+ CREATE', 'START', 'STOP', and 'DELETE'. Below these are two tabs: 'Home' and 'Scheduled Container'. The main table displays four items, each with a checkbox, ID, name, state (all listed as 'Inactive'), creation date, and creator ('余紫綾'). To the right of the table is a 'More' button. A red box highlights the 'START' button for the first item in the list. A black arrow points from the text 'You have to manually start the container' at the top to this highlighted 'START' button.

ID	Name	State	Created at	Created by
244773	job1718337275250	Inactive	2024-06-14 11:54:52	余紫綾
244770	job1718337187771	Inactive	2024-06-14 11:53:18	余紫綾
244767	job1718336937694	Inactive	2024-06-14 11:49:21	余紫綾
244764	job1718336117638	Inactive	2024-06-14 11:36:03	余紫綾

4. Scheduled container

The screenshot shows the TWCC web interface for managing scheduled containers. The top navigation bar includes the TWCC logo, a search bar with the text "整合方向性YOLOV...", a "SERVICES" dropdown, and user profile icons. The left sidebar has links for "Scheduled Container" and "Monitoring". The main content area is titled "Scheduled Container Details" and shows a table of jobs. The "JOBS" tab is active, indicated by a red box around its label. A "REFRESH" button is also present. The table columns are ID, Job Started at, Job Ended at, Created at, and State. Job 1 is listed as finished, and Job 2 is listed as queueing. Each job row contains a "VIEW LOG" button, which is also highlighted with a red box.

ID	Job Started at	Job Ended at	Created at	State	
1	2024-06-14 11:49	2024-06-14 11:49	2024-06-14 11:49	● Finished	<button>VIEW LOG</button>
2				● Queueing	<button>VIEW LOG</button>

Click to view progress

4. Scheduled container

The screenshot shows the TWCC (Taiwan Computing Cloud) web interface. The top navigation bar includes the TWCC logo, a search bar with the text "整合方向性YOLOV...", a "SERVICES" dropdown, and user profile information. The left sidebar has "Scheduled Container" selected under "Monitoring". The main content area is titled "Scheduled Container Details" and shows a table of "JOBS". The table has columns for ID, Job Started at, Job Ended at, Created at, and State. Two jobs are listed: Job 1 (ID 1, Started 2024-06-19, Ended 2024-06-24, State: Finished) and Job 2 (ID 2, Started 2024-06-24, Ended 2024-06-24, State: Finished). A modal window is open over the table, titled "Job Log". It contains a message in Chinese: "您的 log 已被存放到 https://s3.twcc.ai/ccsjoblogs/MST112353/job_244767_2_1719198332.log?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Expires=604800&X-Amz-SignedHeaders=host&X-Amz-Signature=fefec5a8d754710cd4a8952eb6e44acf923822cdefb7950dfd65c2821da06c4c&X-Amz-Date=20240624T030710Z&X-Amz-Credential=EPNT9XOFZL8VS67ZG6DU%2F20240624%2Fus-east-1%2Fs3%2Faws4_request，請自行下載" (Your log has been stored at https://s3.twcc.ai/ccsjoblogs/MST112353/job_244767_2_1719198332.log?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Expires=604800&X-Amz-SignedHeaders=host&X-Amz-Signature=fefec5a8d754710cd4a8952eb6e44acf923822cdefb7950dfd65c2821da06c4c&X-Amz-Date=20240624T030710Z&X-Amz-Credential=EPNT9XOFZL8VS67ZG6DU%2F20240624%2Fus-east-1%2Fs3%2Faws4_request, please download it yourself). A "CLOSE" button is at the bottom of the modal. A callout box at the bottom left of the main content area says "Copy the URL to download".

Copy the URL to download

4. Scheduled container: Example Commands

A. Multiple training

```
cd /work/jonchang3909/yolov5/ && sudo apt-get update && sudo apt-get install libgl1 -y && pip install pandas && pip install seaborn && pip install pillow==9.5.0 &&  
python train.py --img 416 --batch 72 --epochs 300 --data ../MuseumImages/1505/data.yaml --cfg ./models/yolov5l.yaml --weights " --name 1505V5L -- cache &&  
python train.py --img 416 --batch 72 --epochs 300 --data ../MuseumImages/1510/data.yaml --cfg ./models/yolov5l.yaml --weights " --name 1510V5L -- cache &&  
python train.py --img 416 --batch 72 --epochs 300 --data ../MuseumImages/1515/data.yaml --cfg ./models/yolov5m.yaml --weights " --name 1515V5m -- cache &&  
python train.py --img 416 --batch 72 --epochs 300 --data ../MuseumImages/1520/data.yaml --cfg ./models/yolov5s.yaml --weights " --name 1520V5s --cache
```

B. Scripting

```
./train123.sh
```

C. Zip result folder

```
sudo apt-get install zip gzip tar && zip -r Yolov5Test0305-2.zip '/home/u1513733/yolov5-master/runs/train/test0305-2'
```

5. How to download files from TWCC

Download filezilla
<https://filezilla-project.org/>

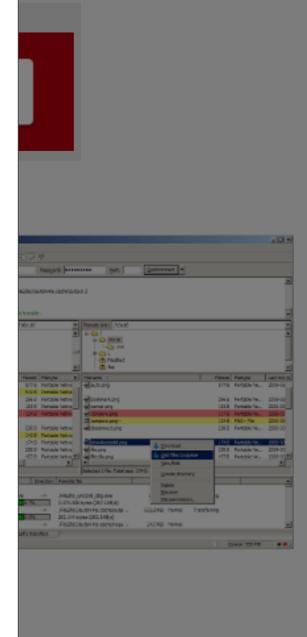
The screenshot shows the official website for FileZilla. The header features the "FileZilla" logo and the tagline "The free FTP solution". A navigation menu on the left includes links for Home, FileZilla (Features, Screenshots, Download, Documentation, FileZilla Pro), FileZilla Server (Download), Community (Forum, Wiki), General (FAQ, Support, Contact, License, Privacy Policy, Trademark Policy), Development (Source code, Nightly builds, Translations, Version history, Changelog, Issue tracker), Other projects (libfilezilla, Octochess), and Sponsors. The main content area has a "Promotion" banner for "FileZilla® Pro" with icons for various cloud storage services and a "GET IN NOW >" button. Below this, the "Overview" section welcomes visitors to the homepage, mentioning support for FTP, FTPS, and SFTP, and noting it is open source software distributed under the Public License. It also mentions FileZilla Pro and FileZilla Server. The "Quick download links" section features two prominent buttons: "Download FileZilla Client" (with a red arrow icon) and "Download FileZilla Server" (also with a red arrow icon). A note below the buttons says "PICK the client if you want to transfer files. Get the server if you want to make files available for others." The "News" section at the bottom lists a recent release: "2023-09-11 - FileZilla Server 1.7.3 released" and "Fixed vulnerabilities".

5. How to download files from TWCC

Please select your edition of FileZilla Client

	FileZilla	FileZilla with manual	FileZilla Pro	FileZilla Pro + CLI
Standard FTP	Yes	Yes	Yes	Yes
FTP over TLS	Yes	Yes	Yes	Yes
SFTP	Yes	Yes	Yes	Yes
Comprehensive PDF manual	-	Yes	Yes	Yes
Amazon S3	-	-	Yes	Yes
Backblaze B2	-	-	Yes	Yes
Dropbox	-	-	Yes	Yes
Microsoft OneDrive	-	-	Yes	Yes
Google Drive	-	-	Yes	Yes
Google Cloud Storage	-	-	Yes	Yes
Microsoft Azure Blob + File Storage	-	-	Yes	Yes
WebDAV	-	-	Yes	Yes
OpenStack Swift	-	-	Yes	Yes
Box	-	-	Yes	Yes
Site Manager synchronization	-	-	Yes	Yes
Command-line interface	-	-	-	Yes
Batch transfers	-	-	-	Yes

Download **Select** **Select** **Select**



5. How to download files from TWCC

Obtain the private key

Option 1: Create an interactive container and open the terminal



Open the Terminal

5. How to download files from TWCC

The 3 commands create and obtain key file:

```
ssh-keygen -t rsa -b 4096 -N "" -f ~/.ssh/id_rsa  
cat >> ~/.ssh/authorized_keys < ~/.ssh/id_rsa.pub  
cat ~/.ssh/id_rsa
```

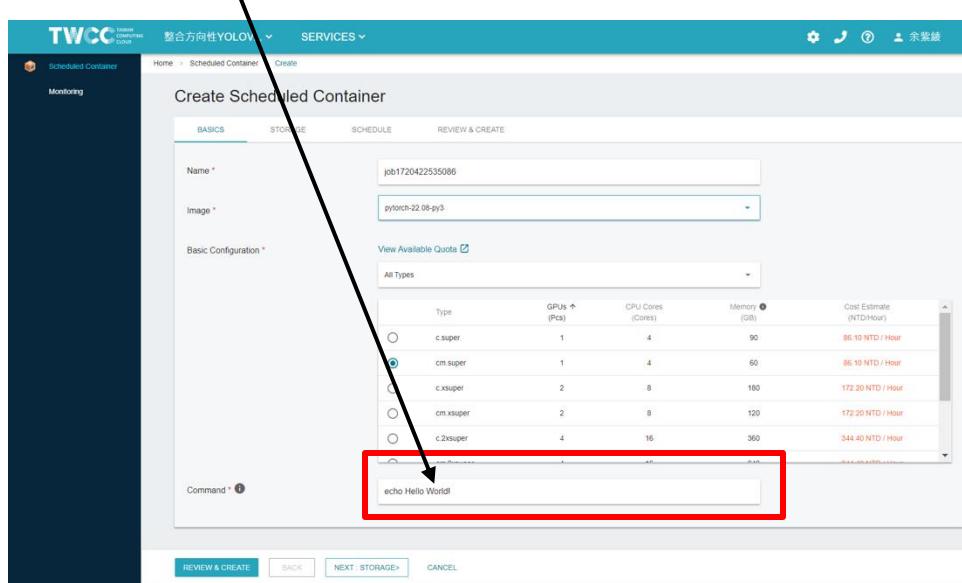
```
jupyter  
init: Setting environment variables  
ul1513733@h9tq3wctr1708572166345-w77ls:~$ cat ~./ssh/id_dsa  
-----BEGIN DSA PRIVATE KEY-----  
[REDACTED]  
-----END DSA PRIVATE KEY-----  
ul1513733@h9tq3wctr1708572166345-w77ls:~$
```

Copy the text contained in the entire **red box**, paste it into notepad, and change the attachment name to **【 .ppk 】**, for example, test1.ppk

This red area is a key file, including BEGIN-END.

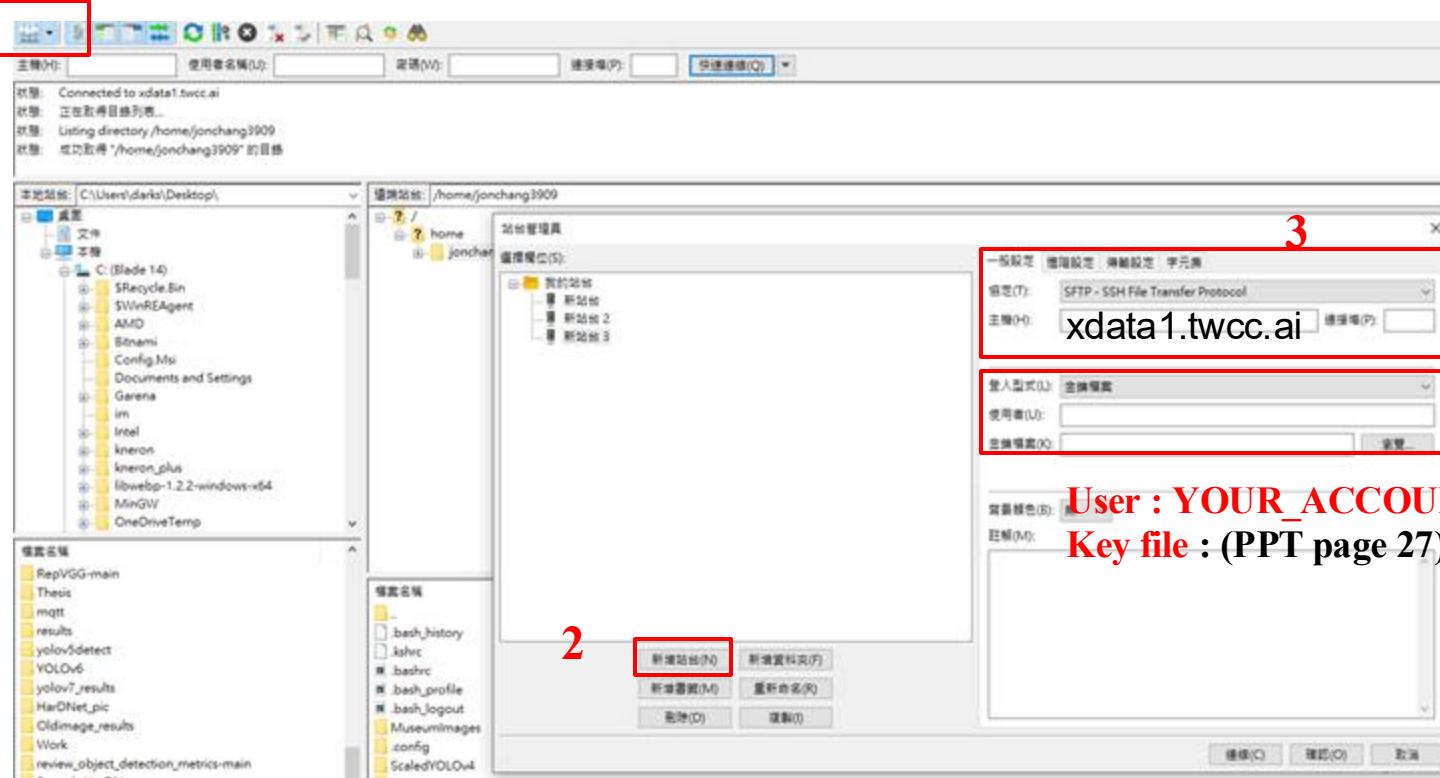
5. How to download files from TWCC

- Option 2: Input the following commands under the schedule container
- `cd ~/ && ssh-keygen -t rsa -b 4096 -N "" -f ~/.ssh/id_rsa && cat >> ~/.ssh/authorized_keys < ~/.ssh/id_rsa.pub && cat ~/.ssh/id_rsa`



5. How to download files from TWCC

1



3



4

User : YOUR_ACCOUNT (PPT page 8)
Key file : (PPT page 27)

2



5. How to download files from TWCC

新站台 - sftp://xdata1.twcc.ai - FileZilla

檔案(E) 編輯(E) 檢視(V) 傳輸(I) 同伺服器(S) 書籤(B) 說明(H)

主機(H): [xdata1.twcc.ai] 使用者名稱(U): [] 密碼(W): [] 連接埠(P): [] 快速連線(Q)

狀態: Connected to xdata1.twcc.ai
狀態: 正在取得 "/user/accesskeys/list" 的目錄列表...
指令: cd "/user/accesskeys/list"
錯誤: Directory /user/accesskeys/list: no such file or directory
指令: pwd

回應: Current directory is: "/home/u"
指令: ls
狀態: Listing directory /home/u
狀態: 成功取得 "/home/u" 的目錄

本地站台: C:\Users\
遠端站台: /home/u

Connection result

檔案名稱 檔案大... 檔案類型 最後修改時間
..
.anaconda 檔案資料夾 2022/8/16 ...
.aws 檔案資料夾 2022/12/21 ...
.azure 檔案資料夾 2022/12/21 ...
.conda 檔案資料夾 2024/2/16 ...
.continuum 檔案資料夾 2022/8/16 ...
19 個檔案 與 62 個目錄. 總共大小: 32,145,404 位元組

檔案名稱 檔案... 檔案類... 最後修改... 權限 擁有人...
..
.local 檔案資料... 2024/2/2... drwxr... u15137...
.pip 檔案資料... 2024/2/2... drwxr... u15137...
.ssh 檔案資料... 2023/12/... drwx... u15137...
.bash_history 1,986 BASH... 2024/2/2... -rw----... u15137...
.bash_logout 19 Bash... 2022/12/... nw u15137...
6 個檔案 與 3 個目錄. 總共大小: 3,258 位元組

伺服器/本地檔案 方向 遠端檔案 大小 優先... 狀態
等候的檔案 傳輸失敗 傳輸成功

32

5. How to download files from TWCC

Here are the storage capacities for the home directory and the work directory. We can choose the larger capacity of the work directory to execute larger-scale program computations in the scheduled container.

The screenshot shows the TWCC Storage and Resource Usage interface. It displays storage statistics for two directories: Home Directory and Work Directory. Both sections include a donut chart showing used and available storage, a table with total storage details, and a 'Latest Updated' timestamp. The Home Directory section is highlighted with a red box. Below these sections are project summaries for Compute, Analytics & Database and Networking & Security.

Home Directory		Work Directory	
		Latest Updated: 2024-06-24 10:47	
	Used 1.36 GiB		Used 0 Byte
	Available 98.64 GiB		Available 1.5 TiB
Total Storage 100 GiB		Total Storage 1.5 TiB	

Project: Compute, Analytics & Database

Interactive Container 0	Scheduled Container 4	HPC Job 0	VCS Instance 0
----------------------------	--------------------------	--------------	-------------------

Project: Networking & Security

Virtual Network 0	Load Balancer 0	Auto Scaling 0
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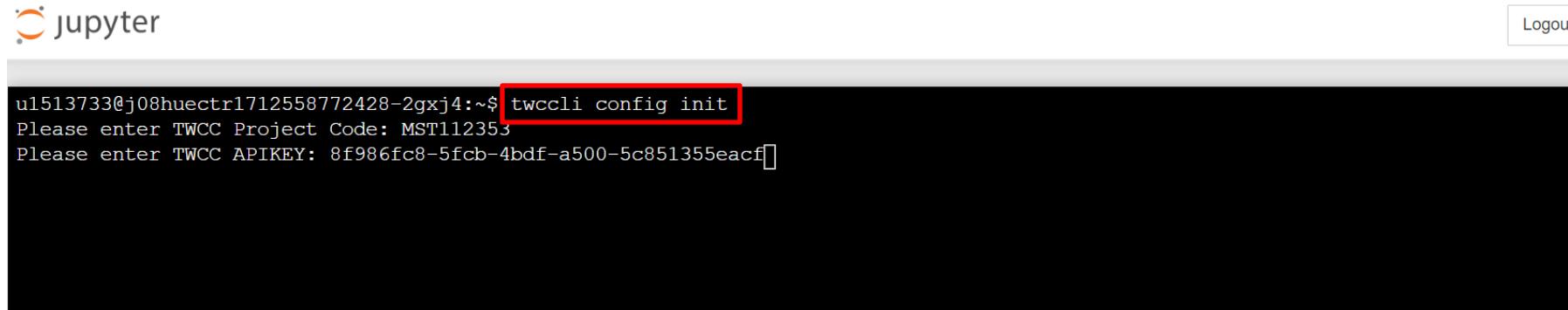
6. Query existing Interactive containers and delete them

```
u1513733@j08huectr1712558772428-2gxj4:~$ twccli config version  
[TWCCCLI] This version is 0.5.21  
u1513733@j08huectr1712558772428-2gxj4:~$ pip install -U TWCC-CLI  
Requirement already satisfied: TWCC-CLI in /opt/conda/lib/python3.8/site-packages (0.5.21)  
Collecting TWCC-CLI  
  Downloading TWCC_CLI-0.6.1-py3-none-any.whl.metadata (13 kB)  
Requirement already satisfied: sphinx-click in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (3.0.1)  
Requirement already satisfied: myst-parser in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (0.15.2)  
Collecting docutils==0.18 (from TWCC-CLI)  
  Downloading docutils-0.18-py2.py3-none-any.whl.metadata (2.9 kB)  
Requirement already satisfied: loguru in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (0.5.3)  
Requirement already satisfied: jmespath in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (0.10.0)  
Requirement already satisfied: netaddr in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (0.8.0)  
Requirement already satisfied: pvtz in /opt/conda/lib/python3.8/site-packages (from TWCC-CLI) (2021.1)
```

In Jupyter of Interactive containers,
Look for Query the TWCC CLI version and update it.

- twccli config version
- pip install -U TWCC-CLI

6. Query existing Interactive containers and delete them



The screenshot shows a Jupyter Notebook interface with a terminal window. The terminal prompt is "u1513733@j08huectr1712558772428-2gxj4:~\$". Below the prompt, there are two lines of text: "Please enter TWCC Project Code: MST112353" and "Please enter TWCC APIKEY: 8f986fc8-5fc8-4bdf-a500-5c851355eacf". The command "twccli config init" is highlighted with a red rectangular box around its first few characters.

Enter the following command

- twccli config init

Enter the **TWCC APIKEY** and **TWCC Project Code** to log in to the TWCC CLI.
(Refer to PPT page33)

6. Query existing Interactive containers and delete them

The screenshot shows the TWCC API Key Management page. On the left sidebar, the 'API Key' option is highlighted with a red box. The main content area displays a table with one item. The table columns are: Name, API Key, Project, Master Key, Created at, Expired at, and Valid. The data row shows: Name '59dff30c', API Key (redacted), Project (redacted), Master Key (green checkmark), Created at '2023-12-08 09:41:39', Expired at '2024-12-09 13:25:07', and Valid (green checkmark). Below the table, the text 'TWCC APIKEY' and 'TWCC Project Code' is overlaid in green.

Name	API Key	Project	Master Key	Created at	Expired at	Valid
59dff30c	*****	(redacted)	✓	2023-12-08 09:41:39	2024-12-09 13:25:07	✓

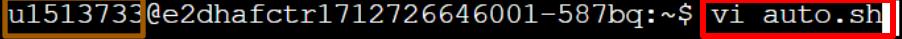
Click API key management,
And copy **TWCC Project Code** and **TWCC APIKEY**. (For PPT page32)

6. Query existing Interactive containers and delete them

TWCC CLI login results

```
u1513733@j08huectr1712558772428-2gxj4:~$ twccli config init
Do you agree we use the collection of the information by GA to improve user experience? [Y/n]: y
Please enter TWCC Project Code: [REDACTED]
Please enter TWCC APIKEY: [REDACTED]
Hi! 余紫綾, welcome to TWCC!
Add language setting to `~/.bashrc`.
+ parameters +-----+
| key | value |
+-----+
| _TWCC_API_KEY_ | [REDACTED] |
| _TWCC_PROJECT_CODE_ | [REDACTED] |
| session_created_time | 2024-04-08 16:16:55 |
| twcc_cli_version | 0.6.1 |
| twcc_apikey_owner | 余紫綾 |
| twcc_data_path | /home/u1513733/.twcc_data |
| package_yaml | /home/u1513733/.local/lib/python3.8/site-packages/twccli/yaml/TWCC_API.yaml |
| twcc_file_session | /home/u1513733/.twcc_data/credential |
| twcc_file_resources | /home/u1513733/.twcc_data/resources |
+-----+
u1513733@j08huectr1712558772428-2gxj4:~$ [REDACTED]
```

6. Query existing Interactive containers and delete them

CCS_ID 
Username 

```
u1513733@e2dhafctr1712726646001-587bq:~$ twccli ls ccs
+ CCS Info. -----+
| id      | name           | create_time       | status |
+-----+-----+-----+-----+
| 4556466 | ctr1712726646001 | 2024-04-10 13:24:47 | Ready  |
+-----+-----+-----+-----+
```

View the currently used Interactive container ID

- twccli ls ccs

Enter the following command to edit the automation script

- vi auto.sh

6. Query existing Interactive containers and delete them

Enter i Enter editing mode and copy and paste the following example script into auto.sh. The content can be modified according to your algorithm.

```
TWCC_CLI_CMD=/home/<USERNAME>/local/bin/twccli
#<USERNAME>: Host account
echo "1. Perform operations"
#Input the executable file of the calculation program
echo "2. Delete the development container"
$ TWCC_CLI_CMD rm ccs -f -s <CCS_ID>
#<CCS_ID>: Container ID of Step 3
```

<https://man.twcc.ai/@twccdocs/doc-cli-main-zh/https%3A%2F%2Fman.twcc.ai%2F%40twccdocs%2Fhowto-cli-ecs-automate-compute-delete-with -twccli-zh>

Please replace it with your **Username** (Refer to PPT page35)

6. Query existing Interact

For example, TWCC_CLI_CMD =/home/u1513733/.local/bin/twccli

```
TWCC_CLI_CMD=/home/<USERNAME>/.local/bin/twccli
```

```
#<USERNAME> : 主機帳號
```

```
echo "1. 執行運算"
```

```
#輸入運算程式的執行檔
```

```
echo "2. 刪除開發型容器"
```

```
$TWCC_CLI_CMD rm ccs -f -s <CCS_ID>
```

```
#<CCS_ID> : Step 3 的容器 ID
```

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-- INSERT --
```

You can enter commands below the echo 1

Please replace the **CCS_ID** which you want to delete after performing the operation,
For example,

\$ TWCC_CLI_CMD rm ccs -f -s 4556466
(Refer to PPT page35)

Press the Esc key and enter :wq !
to save and exit the editing interface.

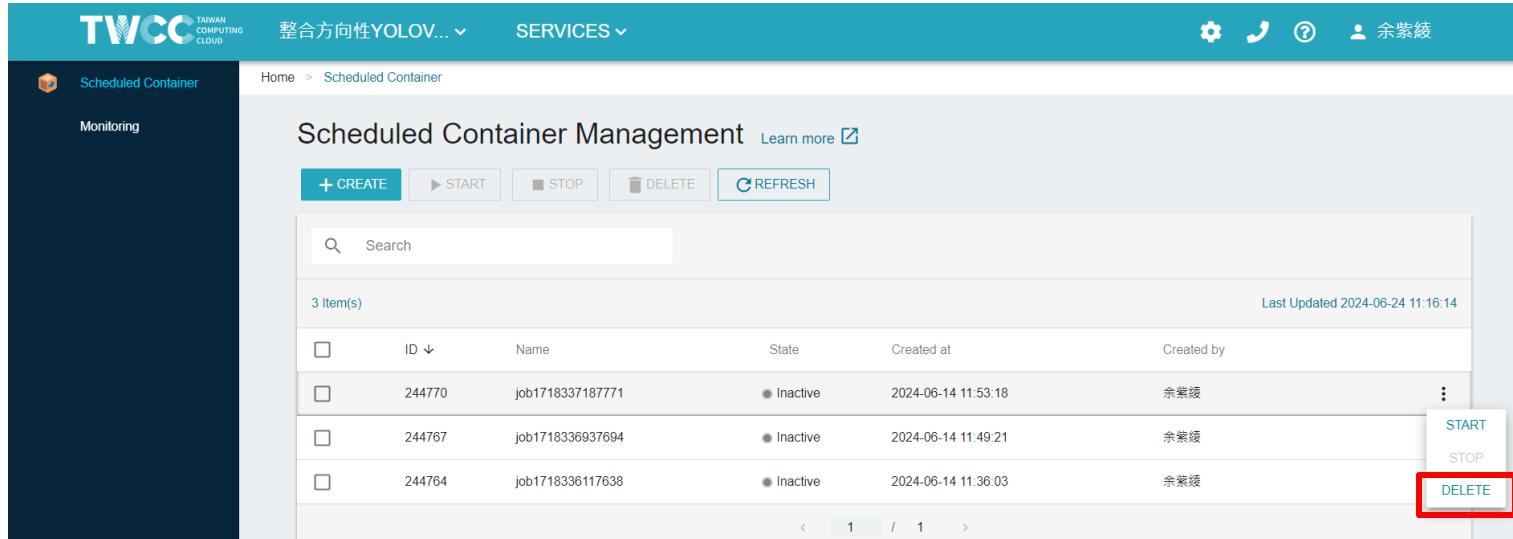
6. Query existing Interactive containers and delete them

```
init: Setting environment variables
u1513733@e2dhafctr1712726646001-587bq:~$ twccli ls ccs
+ CCS Info. -----+-----+-----+
| id      | name          | create_time      | status   |
+-----+-----+-----+-----+
| 4556466 | ctr1712726646001 | 2024-04-10 13:24:47 | Ready    |
+-----+-----+-----+-----+
u1513733@e2dhafctr1712726646001-587bq:~$ vi auto.sh
u1513733@e2dhafctr1712726646001-587bq:~$ bash auto.sh
1. 執行運算
2. 刪除開發型容器
u1513733@e2dhafctr1712726646001-587bq:~$
```

Execute automation script

- bash auto.sh

6. Query existing Interactive containers and delete them



The screenshot shows the TWCC (Taiwan Computing Cloud) web interface for managing scheduled containers. The top navigation bar includes the TWCC logo, a dropdown menu for '整合方向性YOLOV...', a 'SERVICES' dropdown, and user profile information for '余紫綾'. On the left sidebar, there are links for 'Scheduled Container' and 'Monitoring'. The main content area is titled 'Scheduled Container Management' with a 'Learn more' link. Below this are buttons for '+ CREATE', 'START', 'STOP', 'DELETE', and 'REFRESH'. A search bar is present above a table listing '3 Item(s)' of scheduled containers. The table columns are: ID (with a sorting arrow), Name, State, Created at, and Created by. The last column contains three vertical dots, each with a context menu. The menu items are 'START', 'STOP', and 'DELETE', with 'DELETE' being the option highlighted with a red box. The table also shows the last update time as 'Last Updated 2024-06-24 11:16:14'. The data in the table is as follows:

ID	Name	State	Created at	Created by
244770	job1718337187771	Inactive	2024-06-14 11:53:18	余紫綾
244767	job1718336937694	Inactive	2024-06-14 11:49:21	余紫綾
244764	job1718336117638	Inactive	2024-06-14 11:36:03	余紫綾

After the program is executed , you can confirm that the container has been deleted from the list on.