

Discuz! Forum Deployment on Huawei Cloud: Simplified Lab Notes

These notes capture the entire lab process for building a computing and storage architecture for a Discuz! forum on Huawei Cloud. Everything is explained clearly, and all the essential commands are included!

1. Lab Environment & Goal Overview

- **What we did:** We built a website (a Discuz! forum) using two main servers—one for the database and one for the web application—and set up shared storage.
 - **The Goal:** To learn how to deploy stable services (like MySQL) using **Images** and dynamic services (like Discuz! Web) using **Scripts**, and then connect them using **SFS** (shared storage).
 - **Preset Lab:** We clicked the “Preset Lab” button.
 - **Why?** It's like having a helper set up your workstation with all the tools, accounts, and basic network wires already connected, so we could focus on the main build.
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2. Deploying the MySQL Database Server (The Stable Way: Using an Image)

The database server stores all the forum posts, user accounts, and settings. Since the software on this server (MySQL) rarely changes, using an **Image** is the fastest way to deploy it.

2.1. Step 1: Creating an Image

An image is a **snapshot** or a perfect copy of a server at a specific moment. We made an image from a server that already had MySQL installed (`ecs-db`).

Region **AP-Singapore** Type **Create Image** Source ****ECS** Name **img-db**

- **Service: IMS** (Image Management Service).
- **Wait Time:** About 5 minutes for the snapshot to finish.

2.2. Step 2: Applying the Created Image

We used the new snapshot (`img-db`) to create a brand-new, ready-to-go database server (`ecs-db-img`).

Image ****Private image** Network ****vpc-primary** ECS Name **ecs-db-img**

- **Service: ECS** (Elastic Cloud Server).
 - **Result:** We now have a second MySQL server ready to connect to the forum.
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3. **Deploying the Discuz! Web Server (The Flexible Way: Using Scripts)**

The web server handles the forum software (Discuz!) and constantly serves new pages. Because we might need to change the application or update it often, we used a **script** to automate the setup process.

3.1. Step 1: Creating and Uploading the Deployment Script

We wrote a set of instructions (a script) to download the forum files, set up the web server software (Apache/PHP), and then stored it safely in **OBS**.

`vim script.txt` Creates and opens a new file named `script.txt` on the desktop.

`#!/bin/bash` Tells the system to run the commands using the Bash shell.

`yum install -y httpd php...`

Installs all the necessary web server and PHP components.

`systemctl start httpd.service`

Starts the Apache web server (the software that serves web pages).

`wget https://labfiles-...` Downloads the zipped Discuz! forum software.

`unzip Discuzenglish.zip` Unzips the forum files.

`mv root/Discuz/* /var/www/html` Moves the forum files into the public web folder.

`chmod -R 777 /var/www/html`

Gives the web server full permission to read and write files in the folder (needed for the installation).

- **Saving the File:** Press **"Shift" + ":",** then enter `wq` and press **Enter**.

- **OBS Bucket:** We created a storage bucket called `discuz-obs` (or similar, must be unique).
 - **Crucial Setting: Bucket Policies** were set to **Public Read/Write** so the server could download the script.
- **Upload:** We uploaded `script.txt` to the `discuz-obs` bucket.
- **URL:** We copied the **Object URL** (e.g., `https://discuz-obs.obs.../script.txt`) for the next step.

3.2. Step 2: Creating the Web ECS with the Script (User Data)

We configured the network and then launched the web server (`ecs-web`), giving it the script's URL in the **User Data** section.

- **Network Setup:**
 - **Subnet:** Created `subnet-web` (CIDR: `192.168.1.0/24`).
 - **Security Group:** Created `sg-web` using the **General-purpose web server** template to allow web traffic (ports 80/443).
- **ECS Configuration:**
 - **Image:** Public image | **CentOS 7.6 64bit**.
 - **Network:** `vpc-primary \` | `subnet-web` .
 - **EIP: Auto assign** (so we can access it from the internet).
 - **Advanced Options (User Data):** This is where the magic happens! We entered the following script, which downloads and runs our deployment script:

```
#!/bin/bash
cd /root
wget https://discuz-obs.obs.ap-southeast-
3.myhuaweicloud.com/script.txt # **<-- REPLACE WITH YOUR OBS URL**
mv script.txt script.sh
sed -i 's/\r//' script.sh
chmod +x script.sh
bash script.sh
```

- **Key Command Explained:** `sed -i 's/\r//' script.sh`
 - When a file is created on a Windows computer and run on Linux, it can cause problems because of hidden characters (`\r`). This command **removes** those hidden characters, making the script safe to run on Linux.

3.3. Step 3: Installing Discuz! and Connecting to MySQL

1. We copied the **EIP** (public internet address) of `ecs-web` .
2. We opened a browser and went to `http://EIP of ecs-web` .
3. We followed the Discuz! installer steps:
 - Clicked “I agree” and “Next.”
 - Selected “A new installation Discuz! X.”
 - **Database Configuration:**
 - **Database server:** We entered the **Private IP address** of our database server (`ecs-db-img`).
 - **Database PW:** `Hw0d21d59c6` .
 - We set the Admin PW.

- **Result:** The web server is now successfully talking to the database server!
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4. Storage: Mounting an SFS File System (Shared Space)

We needed a way for multiple servers (though we only used one in the final step, SFS is for sharing) to access the same files, especially for uploaded attachments and media.

- **Service: SFS** (Scalable File Service) Turbo.
 - **Analogy:** SFS is like a large, shared network folder that multiple cloud computers can connect to at the same time.

4.1. Step 1: Purchasing an SFS File System

We created a new file system instance.

Name **sfs-turbo-test** Protocol **NFS** (Network File System)

4.2. Step 2: Mounting the SFS File System

We told the web server (`ecs-web`) how to find and connect to the shared folder.

1. **Reset Password:** We reset the password for the `ecs-web` server.

2. **SSH Login:** We used the terminal to log into the web server using its EIP:

```
| ssh root@EIP of ecs-web
```

3. **Install Necessary Software:** We installed the tools needed to connect to a network file system.

```
| yum -y install nfs-utils  
| yum -y install bind-utils
```

4. **Create Local Folder (Mount Point):** We created an empty folder on the web server where the SFS files will appear.

```
| mkdir /mnt/sfs_turbo
```

5. **Run Mount Command:** We copied the specific Linux Mount command from the SFS console and ran it. (The command uses the SFS service IP and the path.)

6. **Verify:** We checked the connection:

```
| mount -l
```

- **Result:** The web server can now store and retrieve files in the shared SFS volume, making it easy to share data if we deploy more web servers later!

5. ? FAQs: Image vs. Script

Speed **Fast** to deploy. **Slow** to deploy (must execute script).

Flexibility **Low** (Need to make a new snapshot for changes).

High (Can be easily changed before deployment).

Cost **Expensive** (You pay to store the image).

Cheap (Just pay for basic server storage).

Recommended For **Stable** things that don't change (e.g., MySQL).

Dynamic things that change often (e.g., Web App).