/Projek DOS

Install Apache Doris 3.0.6 - Centos 9

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Prerequisites and System Configuration

1. Update System Packages:

   sudo dnf update -y

2. Install Essential Build Tools and Dependencies:

   sudo dnf install -y cmake git gcc gcc-c++ make automake libtool m4 patch java-17-openjdk java-17-openjdk-devel flex maven unzip byacc wget make glibc-devel libstdc++-devel kernel-headers firewalld python3

   Optional:

   sudo dnf groupinstall "Development Tools"

3. Set JAVA_HOME Environment Variable:

   vi ~/.bash_profile

   #add line

   # User specific environment and startup programs

   JAVA_HOME=/usr/lib/jvm/java-17-openjdk-17.0.15.0.6-3.el9.x86_64

   PATH=$PATH:$JAVA_HOME/bin:$HOME/bin

   export PATH

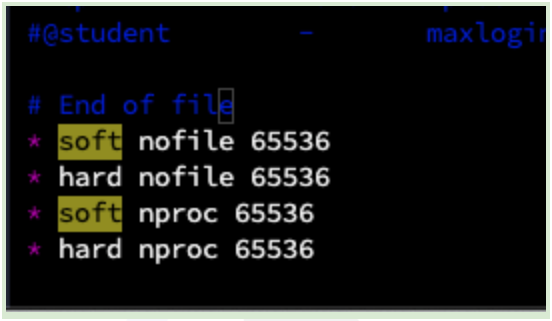
   source ~/.bash_profile
   echo $JAVA_HOME

4. Configure System Limits (ulimit) & Kernel Parameters:
   - Open File Limits:
     Add the following lines to /etc/security/limits.conf.

     sudo vi /etc/security/limits.conf
     * soft nofile 65536

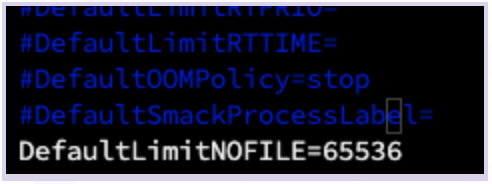
     * hard nofile 65536
     * soft nproc 65536

     * hard nproc 65536



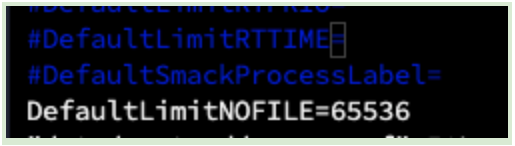
     sudo vi /etc/systemd/system.conf

     DefaultLimitNOFILE=65536



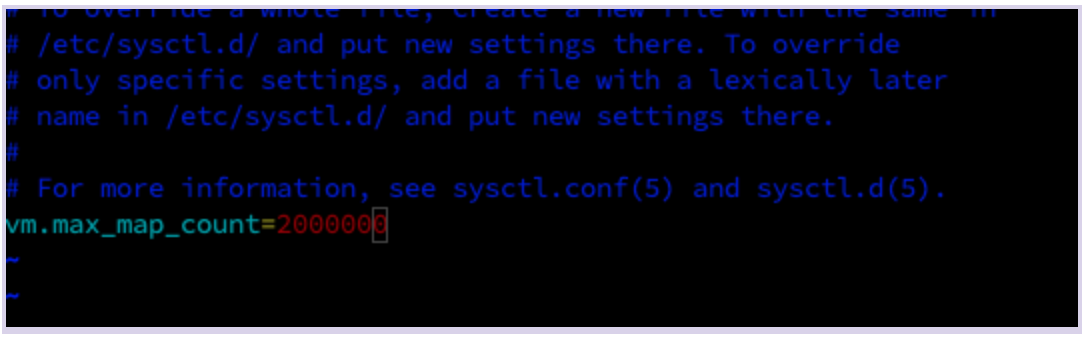
     sudo vi /etc/systemd/user.conf

     DefaultLimitNOFILE=65536



   - Kernel Parameters:
     Add vm.max_map_count to /etc/sysctl.conf.
     sudo vi /etc/sysctl.conf

     vm.max_map_count=2000000
     sudo sysctl -p



- ulimit Parameters:

  vi ~/.bash_profile

  ulimit -n 65536

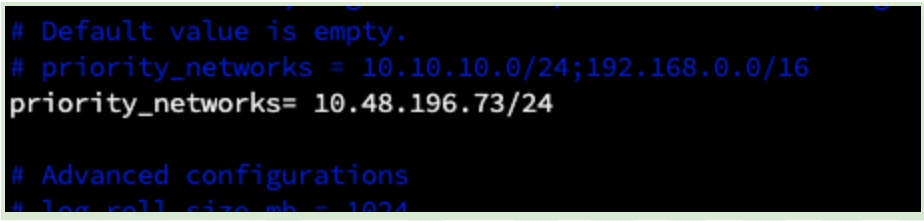
5. log out and log back in, or reboot.

Install and Configure Apache Doris (Binary)

1. Download Doris
   wget
   https://apache-doris-releases.oss-accelerate.aliyuncs.com/apache-doris-3.0.6-bin-x64.tar.gz

2. Extract Doris
   tar -zxvf
   https://apache-doris-releases.oss-accelerate.aliyuncs.com/apache-doris-3.0.6-bin-x64.tar.gz

3. Configure Front End (FE):
   Edit the fe.conf file.
   vi your_doris/fe/conf/fe.conf
   priority_networks=your_ip/24



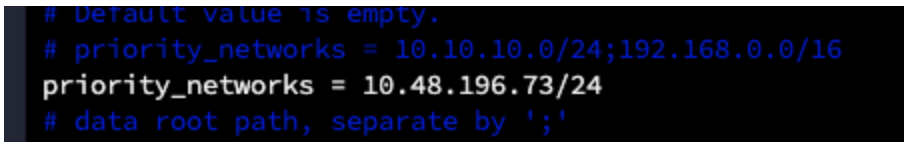
   To check your_ip run bash $:ip addr show . and Check the ip */24

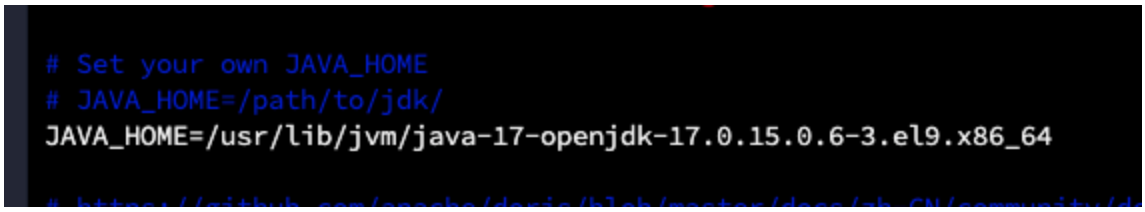
4. Configure Back End (BE):
   Edit the be.conf file.

   vi /opt/doris/deploy/be/conf/be.conf

   JAVA_HOME = /usr/lib/jvm/java-17-openjdk-17.0.15.0.6-3.el9.x86_64

   priority_networks=your_ip/24





Firewall Configuration (Firewalld)

You need to open the ports used by Doris services.

1. **Open FE Ports:**
   - query_port (default: 9030) - MySQL client connection
   - http_port (default: 8030) - Web UI
   - rpc_port (default: 9020) - FE internal communication
   - edit_log_port (default: 9010) - FE internal communication

   ```
   sudo firewall-cmd --zone=public --add-port=9010/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=9020/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=9030/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=8030/tcp --permanent
   ```

2. **Open BE Ports:**
   - be_port (default: 9060) - BE internal communication
   - heartbeat_service_port (default: 9050) - FE-BE heartbeat
   - brpc_port (default: 8060) - BE internal communication
   - webserver_port (default: 8040) - BE web UI / data import

   ```
   sudo firewall-cmd --zone=public --add-port=9060/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=9050/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=8060/tcp --permanent
   sudo firewall-cmd --zone=public --add-port=8040/tcp --permanent
   ```

3. **Reload Firewall:**

   ```
   sudo firewall-cmd --reload
   ```

Start Doris Services

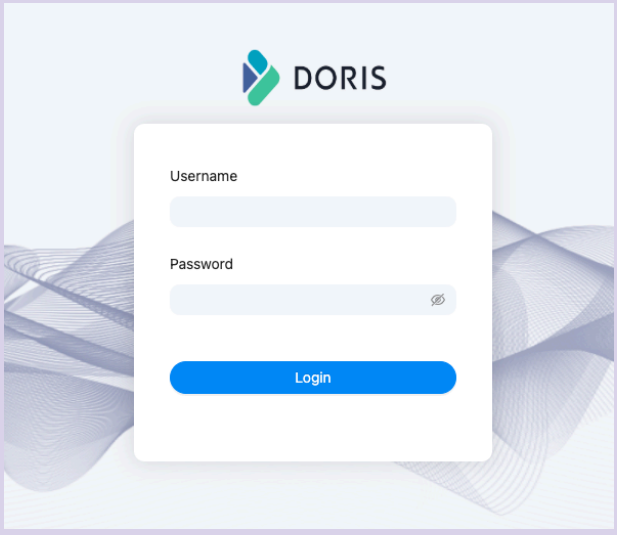
1. Start Front End (FE):
   Navigate to the FE directory and start the service.
   Go to bin
   `./start_fe.sh --daemon`

2. check if service already run

   `sudo ss -tuln | grep -E '9010|9020|9030|8030'`

   ```
   tcp   LISTEN 0      50                         *:8030                   *:*
   tcp   LISTEN 0      1024                       *:9020                   *:*
   tcp   LISTEN 0      1024                       *:9030                   *:*
   tcp   LISTEN 0      50      [::ffff:10.48.196.73]:9010                  *:*
   ```

   Check on browser: http://localhost:8030/home

3. Start Back End (BE):
   Navigate to the BE directory and start the service.

   Go to bin
   `./start_be.sh --daemon`

4. check if service already run

   `sudo ss -tuln | grep -E '9060|9050|8060|8040'`

   ```
   tcp   LISTEN 0      4096             0.0.0.0:8060         0.0.0.0:*
   tcp   LISTEN 0      4096             0.0.0.0:8040         0.0.0.0:*
   tcp   LISTEN 0      1024             0.0.0.0:9060         0.0.0.0:*
   tcp   LISTEN 0      1024             0.0.0.0:9050         0.0.0.0:*
   ```

Add BackEnd Nodes

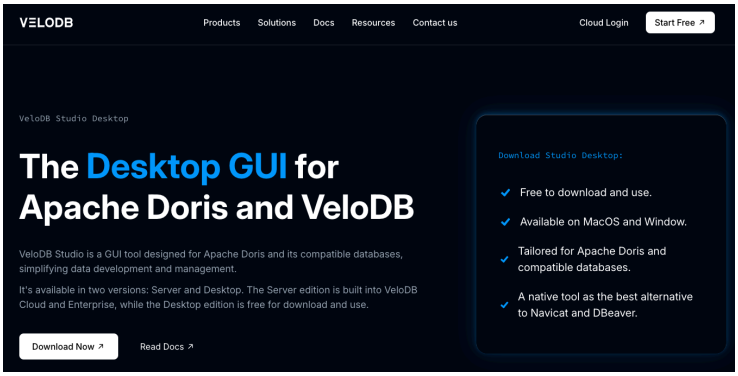
If you are setting up a distributed cluster or your FE is on a different machine than your BE, you need to add the BE to the FE.

1. Install MySQL Client:
   You'll need a MySQL client to connect to the Doris FE.
   ```
   sudo dnf install -y mysql
   ```
2. Connect to Doris FE:
   Use the mysql client to connect to your FE's query_port (default: 9030).
   ```
   mysql -h your_fe_ip -P 9030 -u root
   ```
   Replace your_fe_ip with the actual IP address of your Front End.
3. Add BE Node:
   Once connected to the Doris MySQL client, execute the following command.
   ```
   ALTER SYSTEM ADD BACKEND "your_be_ip:9050";
   SHOW BACKENDS;
   ```
   Replace your_be_ip with the actual IP address of your Back End, and 9050 is the default heartbeat_service_port of the BE.
4. Verify BE Status:
   You can check the status of your BEs (and FEs) using:
   ```
   SHOW PROC '/backends';
   SHOW PROC '/frontends';
   ```
5. Test doris
   ```
   CREATE DATABASE test_db;
   USE test_db;
   CREATE TABLE user_info (
     id INT,
     name VARCHAR(50),
     age INT
   )
   DUPLICATE KEY(id)
   DISTRIBUTED BY HASH(id) BUCKETS 4
   PROPERTIES (
     "replication_num" = "1"
   );
   INSERT INTO user_info VALUES (1, 'Alice', 30), (2, 'Bob', 25);
   ```

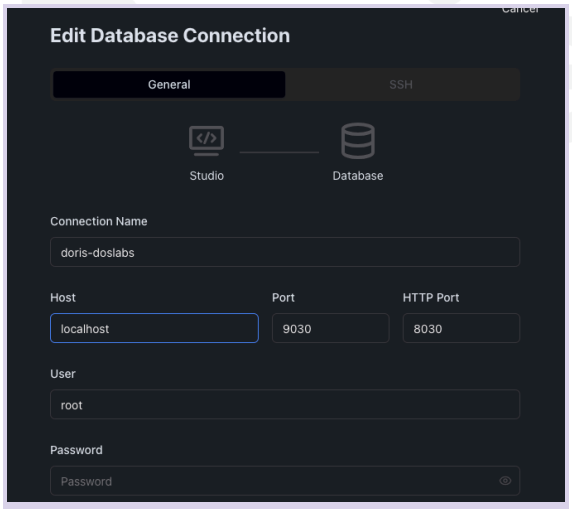
Connect to Doris via VeloDB Studio

VeloDB Studio provides a user-friendly interface to manage, query, and develop on Apache Doris—making data operations faster and easier.

1. Download VeloDB Studio on this link https://www.velodb.io/studio-desktop



2. Install & Config the connection & Test Connection



3. Try SQL Editor Menu

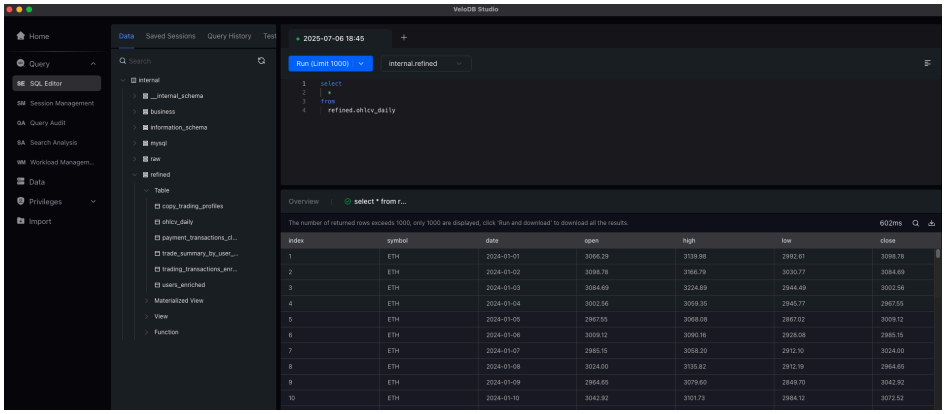


Table of Source

Source URL	Description
https://doris.apache.org/docs/gettingStarted/what-is-apache-doris	Introduction to Apache Doris
https://www.redhat.com/en/blog/customize-user-environments	How to customized Linux user environments
https://docs.velodb.io/studio/overview	Introduce to VeloDB Studio