

Redmine

????????????????Redmine???????????

- ???????
- ?????
- ???

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- [Redmine?????](#)
 - [Ubuntu 20.04?Redmine4.2\(???Redmine5.0\)???????](#)
 - [Ubuntu 20.04/22.04/24.04?Redmine5.1???????](#)
 - [Ubuntu 24.04?Redmine6.0???????](#)
 - [Redmine4.2\(Redmine 5.x\)?SSL??](#)
 - [Redmine4.2\(Redmine5.x\)?????????](#)
 - [Redmine4.2\(5.x\)?Gmail???????](#)
 - [Redmine4.2\(5.x\)?????????????](#)

Redmine?????

Redmine????

Ubuntu

20.04?Redmine4.2(???Redmine5.0)

???????

??????????

1. Redmine????????????????????????????????
2. Redmine????????????(Ruby/??????/Web??????)??????????
3. ???????Web??????????????????
4. Redmine????????????

??????????

- ?Redmine??Ubuntu??????????????
- ?????????????????????

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- Ubuntu????????????????????????????
- DNS????????????????????????????
- ???????????
 - Apache?
 - MySQL
 - Ruby 2.7
- ?????????????aptitude?????????apt????????????????????

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- ?????Redmine 4.2 / Redmine 5.0????????????????
- ?Redmine??4.2??????
 - 5.x????????????????????4.2????????????????(2023?1???)????????????????
 - ???Ubuntu22.04??????????Redmine??????5.x????????????????Ubuntu?20.04????????
- ???redmine?????????/home/www-data/redmine?????????????(/var/lib/redmine)????????????????
- ???Ubuntu22.04???Ruby????????????4.2????????????

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????????????????????

- ?????????????

```
sudo aptitude update
```

- ????????????

```
sudo aptitude install build-essential zlib1g-dev libssl-dev libreadline-dev libyaml-dev libcurl4-openssl-dev libffi-dev mysql-server mysql-client apache2 apache2-dev libapr1-dev libaprutil1-dev imagemagick libmagick++-dev fonts-takao-pgothic subversion git ruby libruby ruby-dev libmysqlclient-dev
```

apache????????????????

```
sudo aptitude install libapache2-mod-passenger
```

ruby???????(gem)????????????????

```
sudo gem install bundler racc mysql2
```

?3 gems installed????????????????

??????mysql????????????

mysql_secure_installation????????????

????????????????????

<https://barrel.reisalin.com/books/bbf94/page/mysql-secure-installation>

mysql?DB????????????

```
sudo mysql -u root -p
```

???????mysql?root????????mysql??????

```
CREATE DATABASE redmine character set utf8mb4;
```

DB "redmine" ??????

```
CREATE USER 'redmine'@'localhost' IDENTIFIED BY 'password';
```

??? "redmine"????????????????

??'password'????????????????

```
GRANT ALL ON redmine.* TO 'redmine'@'localhost';
```

```
flush privileges;
```

```
exit
```

Redmine??????????

- ?????????

```
sudo mkdir -p /home/www-data/redmine
```

????????????

- ?????

```
sudo chown -R www-data:www-data /home/www-data
```

- Redmine 4.2???

```
sudo -u www-data svn co https://svn.redmine.org/redmine/branches/4.2-stable /home/www-data/redmine
```

- ???* Redmine 5.0???

```
sudo -u www-data svn co https://svn.redmine.org/redmine/branches/5.0-stable /home/www-data/redmine
```

Redmine????????????

- ?????????????????????

```
sudo cp -pi /home/www-data/redmine/config/database.yml.example /home/www-  
data/redmine/config/database.yml
```

```
/home/www-data/redmine/config/database.yml
```

????????????????????????????

database.yml ????

```
production:  
  adapter: mysql2  
  database: redmine  
  host: localhost  
  username: redmine  
  # root[]redmine[]  
  password: "redmine[]"  
  encoding: utf8mb4
```

```
# $(production)$(
```

Redmine????????????

- Redmine????????????

```
cd /home/www-data/redmine/ && pwd
```

```
/home/www-data/redmine/ (Redmine????????????)????????????
```

- bundle install

```
sudo -u www-data bundle install --without development test --path vendor/bundle
```

- ?????????????

```
sudo -u www-data bundle exec rake generate_secret_token
```

- DB????????

```
sudo -u www-data RAILS_ENV=production bundle exec rake db:migrate
```

- ???

```
sudo -u www-data RAILS_ENV=production REDMINE_LANG=ja bundle exec rake redmine:load_default_data
```

Apache????????????

????????Redmine????/????????????

```
cat <<- __EOF__ | sudo tee -a /etc/apache2/sites-available/redmine.conf
<VirtualHost *:80>
    ServerName hoge.example.com
    # ServerName$(redmine$(
    DocumentRoot /home/www-data/redmine/public
    <Directory /home/www-data/redmine/public>
        Options -MultiViews
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
__EOF__
```

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- ???????

```
ls -l /etc/apache2/sites-available/redmine.conf
```

- ????????

```
sudo a2ensite redmine.conf
```

- ??????????

```
sudo a2dissite 000-default.conf
```

```
sudo a2dissite default-ssl.conf
```

- ?????????????

```
sudo apache2ctl configtest
```

Syntax OK ?????

- ??????apache??????

```
systemctl status apache2.service
```

active(running)?????

- apache??

```
sudo systemctl restart apache2.service
```

- ??????apache??????

```
systemctl status apache2.service
```

active(running)?????

Web????????????

http://???Redmine???

?Redmine????????????????

???admin/admin????????????????

Redmine????

Ubuntu

20.04/22.04/24.04?Redmine5.1????

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????????????????

- Ubuntu 20.04
 - Ubuntu 22.04
 - Ubuntu 24.04
- ????????????????Ubuntu 20.04????????????????????

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1. Redmine????????????????????
2. Redmine?????????(Ruby/????/Web????)????????
3. ?????Web????????
4. Redmine????

????????

- ?Redmine?Ubuntu????
- ?????

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- Ubuntu????
- DNS????
- ?????
 - Apache?
 - MySQL
 - Ruby
 - 2.7 (Ubuntu 20.04)
 - 3.0 (Ubuntu 22.04)
 - 3.2 (Ubuntu 24.04)
- ?????apt????

????

- ????Redmine 5.1????
- ?????Ubuntu22.04????

- `??redmine????/home/www-data/redmine????(/var/lib/redmine)????`
- `????`
 - `????`

??

Apache????

```
sudo add-apt-repository ppa:ondrej/apache2
```

????

- `????`

```
sudo aptitude update
```

- `????`

```
sudo aptitude install build-essential zlib1g-dev libssl-dev libreadline-dev libyaml-dev libcurl4-openssl-dev libffi-  
dev mysql-server mysql-client apache2 apache2-dev libapr1-dev libaprutil1-dev imagemagick libmagick++-dev  
fonts-takao-pgothic subversion git ruby libruby ruby-dev libmysqlclient-dev
```

apache????

```
sudo aptitude install libapache2-mod-passenger
```

apache????

```
apache2ctl -v
```

Apache/2.4.59 `????2.4.58??http/2????`

ruby????(gem)????

```
sudo gem install bundler racc mysql2
```

3 gems installed????

????mysql????

mysql_secure_installation????

????

mysql?DB??????????

```
sudo mysql -u root -p
```

???????mysql?root?????????mysql???????

```
CREATE DATABASE redmine character set utf8mb4;
```

DB "redmine" ??????

```
CREATE USER 'redmine'@'localhost' IDENTIFIED BY 'password';
```

??? "redmine"?????????????
??'password'?????????????

```
GRANT ALL ON redmine.* TO 'redmine'@'localhost';
```

```
flush privileges;
```

```
exit
```

????DB????????????

```
mysql -u redmine -p
```

```
SHOW DATABASES;
```

```
exit
```

- ????????

```
sudo mkdir -p /home/www-data/redmine
```

???????????

- ????

```
sudo chown -R www-data:www-data /home/www-data
```

- Redmine 5.1???

```
sudo -u www-data svn co https://svn.redmine.org/redmine/branches/5.1-stable /home/www-data/redmine
```

Redmine????????????

- ?????????????????

```
sudo cp -pi /home/www-data/redmine/config/database.yml.example /home/www-  
data/redmine/config/database.yml
```

```
/home/www-data/redmine/config/database.yml
```

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database.yml ????

```
production:  
  adapter: mysql2  
  database: redmine  
  host: localhost  
  username: redmine  
  # root redmine  
  password: "redmine"  
  encoding: utf8mb4  
  # (production)
```

Redmine????????????

- Redmine????????????

```
cd /home/www-data/redmine/ && pwd
```

```
/home/www-data/redmine/ (Redmine?????????)????????
```

- bundle install

```
sudo -u www-data bundle install --without development test --path vendor/bundle
```

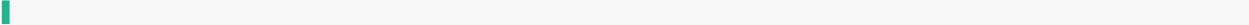
- ?????????????

```
sudo -u www-data bundle exec rake generate_secret_token
```

- ?????????????(Ubuntu 20.04???)

```
sudo -u www-data bundle exec rake generate_secret_token
```

??????



Could not find date-3.3.4, timeout-0.4.1 in any of the sources
Run `bundle install` to install missing gems.

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```
sudo -u www-data bundle update date
```

??????

```
sudo -u www-data bundle exec rake generate_secret_token
```

????????????

- DB??????

```
sudo -u www-data RAILS_ENV=production bundle exec rake db:migrate
```

- ???

```
sudo -u www-data RAILS_ENV=production REDMINE_LANG=ja bundle exec rake redmine:load_default_data
```

Apache????????

????????Redmine????/????????

```
cat <<- __EOF__ | sudo tee -a /etc/apache2/sites-available/redmine.conf
<VirtualHost *:80>
    ServerName hoge.example.com
    # ServerName redmine
    DocumentRoot /home/www-data/redmine/public
    <Directory /home/www-data/redmine/public>
        Options -MultiViews
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
__EOF__
```

????????

- ?????

```
ls -l /etc/apache2/sites-available/redmine.conf
```

- ????????

```
sudo a2ensite redmine.conf
```

- ??????????

```
sudo a2dissite 000-default.conf
```

```
sudo a2dissite default-ssl.conf
```

- ?????????????

```
sudo apache2ctl configtest
```

Syntax OK ?????

- ??????apache??????

```
systemctl status apache2.service
```

active(running)?????

- apache???

```
sudo systemctl restart apache2.service
```

- ??????apache??????

```
systemctl status apache2.service
```

active(running)?????

Web????????????

http://???Redmine???

?Redmine????????????????

???admin/admin????????????????

Redmine????

Ubuntu 24.04?Redmine6.0??????

????????????????

- Ubuntu 24.04
- Ruby 3.1 / 3.2 / 3.3 ???????Ubuntu 22.04 / 20.04????????????
- ? ??[??](#)????????????????????

??????????

1. Redmine????????????????????????
2. Redmine???????????(Ruby/?????/Web?????)????????
3. ??????Web????????????
4. Redmine????????

????????

- ?Redmine??Ubuntu????????
- ?????????????

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- Ubuntu????????????????
- DNS????????????
- ?????????
 - Apache?
 - MySQL
 - Ruby
 - 3.2 (Ubuntu 24.04)
- ??????????aptitude?????????apt????????????

????

- ?????Redmine 6.0.1????????
- ???redmine????????/home/www-data/redmine?????????(/var/lib/redmine)????????
- ?????????????????????????
 - ?????????????????????????

??

Apache????????

```
sudo add-apt-repository ppa:ondrej/apache2
```

????????????????

- ????????????

```
sudo aptitude update
```

- ????????????

```
sudo aptitude install build-essential zlib1g-dev libssl-dev libreadline-dev libyaml-dev libcurl4-openssl-dev libffi-  
dev mysql-server mysql-client apache2 apache2-dev libapr1-dev libaprutil1-dev imagemagick libmagick++-dev  
fonts-takao-pgothic subversion git ruby libruby ruby-dev libmysqlclient-dev
```

apache????????????

```
sudo aptitude install libapache2-mod-passenger
```

apache???????????

```
apache2ctl -v
```

Apache/2.4.59 (Ubuntu) (2024/11/21 2.4.62) <https://httpd.apache.org/docs/2.4/>

ruby?????(gem)????????????

```
sudo gem install bundler racc mysql2
```

23 gems installed????????

?????mysql????????

mysql_secure_installation????

????????

<https://barrel.reisalin.com/books/bbf94/page/mysql-secure-installation>

mysql?DB????????

```
sudo mysql -u root -p
```

?????mysql?root?????mysql?????

```
CREATE DATABASE redmine character set utf8mb4;
```

DB "redmine" ?????

```
CREATE USER 'redmine'@'localhost' IDENTIFIED BY 'password';
```

??? "redmine"????????????????
??'password'????????????????

```
GRANT ALL ON redmine.* TO 'redmine'@'localhost';
```

```
flush privileges;
```

```
exit
```

????DB????????????????

```
mysql -u redmine -p
```

```
SHOW DATABASES;
```

```
exit
```

- ?????????

```
sudo mkdir -p /home/www-data/redmine
```

????????????

- ????

```
sudo chown -R www-data:www-data /home/www-data
```

- Redmine 6.0???

```
sudo -u www-data svn co https://svn.redmine.org/redmine/branches/6.0-stable /home/www-data/redmine
```

Redmine????????????

- ?????????????????

```
sudo -u www-data cp -pi /home/www-data/redmine/config/database.yml.example /home/www-  
data/redmine/config/database.yml
```



```
/home/www-data/redmine/config/database.yml
```

????????????????????

database.yml ????

```
production:
  adapter: mysql2
  database: redmine
  host: localhost
  username: redmine
  # root[redmine]
  password: "redmine"
  encoding: utf8mb4
  # (production)
```

Redmine????????

- Redmine????

```
cd /home/www-data/redmine/ && pwd
```

```
/home/www-data/redmine/ (Redmine????)????
```

- bundle install

```
sudo -u www-data bundle install --without development test --path vendor/bundle
```

- ?????

```
sudo -u www-data bundle exec rake generate_secret_token
```

- DB????

```
sudo -u www-data RAILS_ENV=production bundle exec rake db:migrate
```

- ???

```
sudo -u www-data RAILS_ENV=production REDMINE_LANG=ja bundle exec rake redmine:load_default_data
```

Apache????????

???????Redmine???/????

```
cat <<- __EOF__ | sudo tee -a /etc/apache2/sites-available/redmine.conf
<VirtualHost *:80>
    ServerName [hoge.example.com]
    # ServerName[redmine]
    DocumentRoot /home/www-data/redmine/public
    <Directory /home/www-data/redmine/public>
        Options -MultiViews
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
__EOF__
```

????????

- ???????

```
ls -l /etc/apache2/sites-available/redmine.conf
```

- ???????

```
sudo a2ensite redmine.conf
```

- ?????????

```
sudo a2dissite 000-default.conf
```

```
sudo a2dissite default-ssl.conf
```

- ???????????

```
sudo apache2ctl configtest
```

Syntax OK ?????

- ??????apache??????

```
systemctl status apache2.service
```

active(running)????

- apache??

```
sudo systemctl restart apache2.service
```

- `sudo systemctl status apache2`

```
systemctl status apache2.service
```

active(running)???

Web???

`http://localhost:8080`

`localhost:8080`

`admin/admin`

Redmine4.2(Redmine 5.x)?SSL??

??????????

- ??????????Redmine?SSL?????
- ??SSL???????????

??????????

- Redmine?SSL???????
- SSL?????????????

??

???????????????

- Ubuntu 20.04? / Ubuntu 22.04??Redmine 5.x)
- Apache2.4
- ?????Redmine???????????????????
- ?????SSL???????????????

????

?????SSL???????????????????

- ????????????????????????
- Let's Encrypt???????????

??

??????????

1. ????????????????????????
2. ??SSL???????????????????????????????
3. Apache????????????SSL???????????
4. Redmine?????????????
5. [?????]?????????Redmine???????????????

??????

?SSL????????????????????(Let's Encrypt????3?)

?????????Apache????????????????????/????????????????????

??????????????

```
sudo mkdir /etc/certs
```

??????????????

```
sudo mkdir /etc/private
```

??????????????

????????????????????

- SCP?SFTP????????????????
- Let's Encrypt????????????????/???

??????????????

???Let's Encrypt?2023?1?????hoge.sample.com (/etc/letsencrypt/live/????/????????)??

- hoge.sample.com.crt.202301 (???:/etc/certs???)
- hoge.sample.com.key.202301 (???:/etc/private???)

??????

????????????

hoge.sample.com.crt.CA.202301

??????????????

????????????????????

```
cd /etc/certs && pwd
```

```
/etc/certs
```

```
sudo ln -sf hoge.sample.com.crt.202301 hoge.sample.com.crt
```

```
ls -l hoge.sample.com.crt
```

????????hoge.sample.com.crt.202301????????

- ???????????

```
sudo ln -sf hoge.sample.com.crt.CA.202301 hoge.sample.com.CA.crt
```

??????Global Sign, Sectigo, GeoTrust????????????????????(Let's Encrypt????chain.pem???)

????????????????????

```
cd /etc/private && pwd
```

```
/etc/private ???????
```

```
sudo ln -sf hoge.sample.com.key.202301 hoge.sample.com.key
```

```
ls -l hoge.sample.com.key
```

???????hoge.sample.com.crt.202301????????

????????????????

```
openssl x509 -noout -dates -subject -in /etc/certs/hoge.sample.com.crt
```

- notBefore=
- notAfter=

????????????????????

- subject=CN =

????????????????????????????hoge.sample.com ????????????????? *sample.com

- ?????????????????

```
openssl x509 -pubkey -in /etc/certs/hoge.example.com.crt -noout | openssl md5
```

```
openssl pkey -pubout -in /etc/private/hoge.example.com.key | openssl md5
```

????????????????????????????2?????((stdin)= ?????)????????????????????

- ????????? (Let's Encrypt????????????????)

```
openssl crl2pkcs7 -nocrl -certfile /etc/certs/hoge.example.com.crt | openssl pkcs7 -print_certs -outform PEM |  
awk 'BEGIN {c=0;} /BEGIN CERTIFICATE/ {c++} { print > "cert" c ".pem"}' && openssl verify -CAfile cert2.pem  
cert1.pem
```

“ openssl verify -CAfile cert2.pem cert1.pem
cert1.pem: OK

??????

- ????????? (????????????????????)

```
openssl verify -CAfile /etc/certs/hoge.sample.com.CA.crt /etc/certs/hoge.example.com.crt
```

```
“ /etc/certs/hoge.example.com.crt: OK
```

??????

??SSL????????????????

???????

```
cat /etc/apache2/mods-available/rewrite.load
```

```
cat /etc/apache2/mods-available/ssl.load
```

```
cat /etc/apache2/mods-available/headers.load
```

???????

```
sudo a2enmod rewrite
```

```
sudo a2enmod ssl
```

```
sudo a2enmod headers
```

???????

```
sudo systemctl restart apache2
```

Apache????????

http????????????????

```
sudo mkdir -p /etc/apache2/old
```

```
cd /etc/apache2/sites-available && pwd
```

```
sudo a2dissite redmine.conf
```

```
sudo systemctl restart apache2.service
```

```
http????????????????????
```

```
sudo mv redmine.conf ../old/redmine.conf.$(date +%Y%m%d)
```

```
???http????????????????????
```

??SSL????????

- ?????????????????????????????????
- cat ? __EOF__ ?????????????????? ? ??????(????????????) ? ?????????????

```
cat <<- __EOF__ | sudo tee -a /etc/apache2/sites-available/redmine.conf
<VirtualHost *:80>
    servername [hoge.example.com]
    # [ ]
    RewriteEngine On
        RewriteCond %{HTTPS} off
        RewriteRule ^(.*)$ https://%{HTTP_HOST}%{REQUEST_URI} [R=301,L]
    # HTTP[ ]HTTPS[ ]
</VirtualHost>

<VirtualHost *:443>
    ServerName [hoge.example.com]
    # [ ]
    DocumentRoot [/home/www-data/redmine/public]
    # [ ]
    <Directory [/home/www-data/redmine/public]>
        # [ ]
        Options -MultiViews
        AllowOverride All
        Require all granted
    </Directory>

    #SSL[ ]
    SSLEngine on
    Protocols h2 http/1.1
    # SSL[ ]
```



```
SSLCertificateFile /etc/certs/hoge.example.com.crt
# SSL

SSLCertificateKeyFile /etc/private/hoge.example.com.key
# 

# SSLCACertificateFile /etc/certs/hoge.example.com.CA.crt
# 

#

Header always set Strict-Transport-Security "max-age=63072000"
Header set X-Content-Type-Options "nosniff"
Header always append X-Frame-Options "SAMEORIGIN"
Header set X-XSS-Protection "1; mode=block"

</VirtualHost>

SSLProtocol          all -SSLv3 -TLSv1 -TLSv1.1 -TLSv1.2
SSLCipherSuite        ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES256-GCM-SHA384:EC6-GCM-SHA384
SSLHonorCipherOrder   off
SSLSessionTickets     off

SSLUseStapling On
SSLStaplingCache "shmcb:logs/ssl_stapling(32768)"
# SSL
# </VirtualHost>
__EOF__
```

???????

```
sudo a2ensite redmine
```

????redmine????????

```
sudo apache2ctl configtest
```

Syntax OK ???

```
sudo systemctl restart apache2.service
```

redmine

- https
-
-

Redmine

1. Redmine
2. ? ?
3. (hoge.example.com)
4. HTTPHTTPS

RedmineSSL

RedmineSSL

- Redmine
- Let's Encrypt

SSL

<https://www.ssllabs.com/ssltest/>

1. Hostname:RedmineURL
2. ?Do not show the results on the boards()
3. ?Submit

20231ApacheA

Redmine?????

Redmine4.2(Redmine5.x)??????????

??????????

- Apache????????????????????Redmine?log??????????????????
- ?????????????????
- Redmine????????Web UI????????????????

??????????

- Redmine?????? / ???????????????

??

??????????????

- Ubuntu 20.04?
 - Ubuntu 22.04????
- Redmine 4.2
 - Redmine5.0??????(2023/02/09)
 - Redmine5.1????(2024/04/01)
- Apache 2.4

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??????????

1. Apache????????redmine????????????????
2. rsyslog????????????
3. Redmine????????????????????

Apache????????????

- ?????????????????

```
cd /etc/apache2/sites-available && pwd
```

- ?????????

```
sudo cp -pi redmine.conf /path/to/backup/directory/redmine.conf.$(date +%Y%m%d)
```

????????????????????????????

- ??????

```
diff -u redmine.conf /path/to/backup/directory/redmine.conf.$(date +%Y%m%d)
```

????????????????????

/var/log????????????

- Linux????????

```
cd /var/log && pwd
```

- ?????????????????`

```
sudo ln -sf /home/www-data/redmine/log/ redmine
```

????????????????

- ?????????

```
ls -l redmine
```

???????Redmine????????????

Apache????????

????????????????

```
/etc/apache2/sites-available/redmine.conf
```

???????redmine????????

- ??????

```
CustomLog /home/www-data/redmine/log/access.log combined
ErrorLog /home/www-data/redmine/log/error.log
# Redmine[ ]/[ ]

# [ ]
# <VirtualHost *:443>
#   ServerName [ ] [ ]
# CustomLog /home/www-data/redmine/log/access.log combined
# ErrorLog /home/www-data/redmine/log
#
# [ ]SSL[ ]HTTP[ ]
```

- ???

```
diff -u /path/to/backup/directory/redmine.$(date +%Y%m%d) /etc/apache2/sites-available/redmine.conf
```

????????????????????

- ??

```
<VirtualHost *:443>
    ServerName Redmine[ ]
+   CustomLog /home/www-data/redmine/log/access.log combined
+   ErrorLog /home/www-data/redmine/log/error.log
+
```

????????

- ?????????

```
sudo apache2ctl configtest
```

Syntax OK????

- ?????Apache????

```
systemctl status apache2.service
```

active(running)????

- apache??

```
sudo systemctl restart apache2.service
```

- ?????Apache????

```
systemctl status apache2.service
```

active(running)????

????????????

```
tail -f /home/www-data/redmine/log/access.log
```

????????

????????Redmine????????????

????????

- ???????????

```
sudo chown www-data:www-data /home/www-data/redmine/log/access.log
```

- ???????????

```
sudo chown www-data:www-data /home/www-data/redmine/log/error.log
```

?????Redmine??????????????????

Redmine??????????????????

- ?????????????????

```
cat <<- __EOF__ | sudo tee -a /etc/logrotate.d/redmine
/var/log/redmine/*.log {
    daily
    missingok
    ifempty
    copytruncate
    rotate 10
    compress
    su www-data www-data
}
__EOF__
```

???

- ?????????????????
- 10???
- ???????????
- ?????????????????

??????????

??????????????????

```
sudo logrotate -dv /etc/logrotate.d/redmine
```

??????????????

Redmine????????????????????

- Redmine????????????????

```
cd /home/www-data/redmine/plugins && pwd
```

??????????

- git??????????

```
sudo -u www-data git clone https://github.com/haru/redmine_logs
```

- ??????Apache??????

```
systemctl status apache2.service
```

active(running)?????

- apache??

```
sudo systemctl restart apache2.service
```

- ??????Apache??????

```
systemctl status apache2.service
```

active(running)?????

????

1. Redmine????????????????
2. ???????????
3. ?????????????????????

Redmine????

Redmine4.2(5.x)?Gmail??????

????????

- Redmine?Gmail???????Redmine????????????????

????????

- ?????????SMTP????????
 - (AWS?SMTP????????)
- redmine?configuration.yml??????

??

??????

- Redmine????SSH?????
 - ?????????
- Gmail??????

??Redmine????

/home/www-data/redmine

????????????????

????

????????????

- Gmail????????????????

????????????

??

????????

1. Gmail??????????
2. ???????????
3. Redmine??????????
4. ???????

Google????????

Google????????

1. Google???? ? ?????????
2. Google??????2??????????

????????????????

????????

1. Google???? ? ?????????
2. Google???? ? ?????????
3. ?????????????????
 1. ???????
 2. ???????(????)
 3. ????(redmine?)??
4. ?????????????Google????????????

Redmine????????

????????

????????

```
cat <<- __EOF__ | sudo tee -a /home/www-data/redmine/config/configuration.yml
default:
  email_delivery:
    delivery_method: :smtp
  smtp_settings:
    address: "smtp.gmail.com"
    port: 587
    authentication: :plain
    domain: "smtp.gmail.com"
    user_name: "[Gmail]"
    password: "[ ]"
__EOF__
```

```
ls -l /home/www-data/redmine/configconfiguration.yml
# [ ]
# [ ]
```

????????

```
sudo systemctl restart apache2.service
```

[illegible]

Redmine????

????????????????

1. ??????????
2. ?????????????????????????????????

????????????

????????????????

- ??????????????????
- ??????(bcc):??????
- ??????????????:????????

????????????

1. Redmine????????? 1.????????????????????????????????????
2. ?????????/????????????????????????

??????????

Redmine????

Redmine4.2(5.x)????????????

??

Redmine????????????????????????????????

?????

- ?????????????
- ?????????????????????????

????????

????????????????????????????

??

????????????????????

- Ubuntu 20.04?Linux
 - Ubuntu22.04????????
- Redmine 4.2
 - Redmine5.1????????

??

????????????????

- Redmine????????????
 - (Gmail????????????????)
 - <https://barrel.reisalin.com/books/redmine/page/redmine425xgmail>
- ?????Cron????????
 - ?????????????????????

??????????

1. ?????????????????
2. cron????????????

????????????

- ?????????????

```
mkdir /home/hoge/scripts
```

????????????

- ?????????

```
cd /home/hoge/scripts && pwd
```

????????????

????????????????????????????????

```
cat <<- __EOF__ | tee -a redmine_reminder.sh
#!/bin/bash

# [redacted]/home/www-data/redmine[redacted]
REDMINE_ROOT=${1:-"/home/www-data/redmine"}

# [redacted]3[redacted]
DAYS=${2:-3}

# Redmine[redacted]
cd $REDMINE_ROOT

# [redacted]
bundle exec rake redmine:send_reminders days=$DAYS RAILS_ENV=production
__EOF__
```

????????????????

- ????

```
chmod +x redmine_reminder.sh && ls -l redmine_reminder.sh
```

????????

- ???

```
sudo -u www-data bash /home/hoge/scripts/redmine_reminder.sh
```

warning????

????3????????????

crontab??

```
sudo crontab -e -u www-data
```

- ?????????????????crontab??

- ```
[16 columns of empty boxes]
20 8 * * * /home/hoge/scripts/redmine_reminder.sh 31
30 8 * * * /home/hoge/scripts/redmine_reminder.sh 1

30 16 * * * /home/hoge/scripts/redmine_reminder.sh 7
40 16 * * * /home/hoge/scripts/redmine_reminder.sh 1

20 20 * * * /home/hoge/scripts/redmine_reminder.sh 3
30 20 * * * /home/hoge/scripts/redmine_reminder.sh 1
```

- 8:20 ? 31????????????????
- 8:30 ? 1????????????????
- 16:30 ? 7????????????????
- 16:40 ? 1????????????????
- 20:20 ? 3????????????????
- 20:30 ? 1????????????????

??????????

????? ?????????Redmine????????????????????????????????

- crontab ????

????????????????

- ```
cat /var/log/cron.log
```

- BEGIN EDIT (www-data)
- REPLACE (www-data)
- END EDIT (www-data)

??crontab????????????????

????????????????????????(????????????cron????????????)