

Memasang Moodle dengan 2 Cara

Konvensional dan Berbasis Kontainer

andi@sibermu.ac.id



JAGOANHOSTING
Best Price per Performance Cloud Service

Konvensional v.s Kontainer dalam Memasang Moodle

andi@sibermu.ac.id

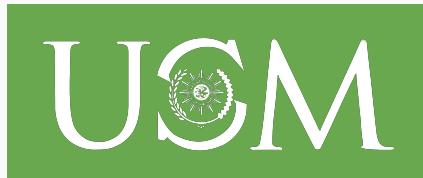


JAGOANHOSTING
Best Price per Performance Cloud Service



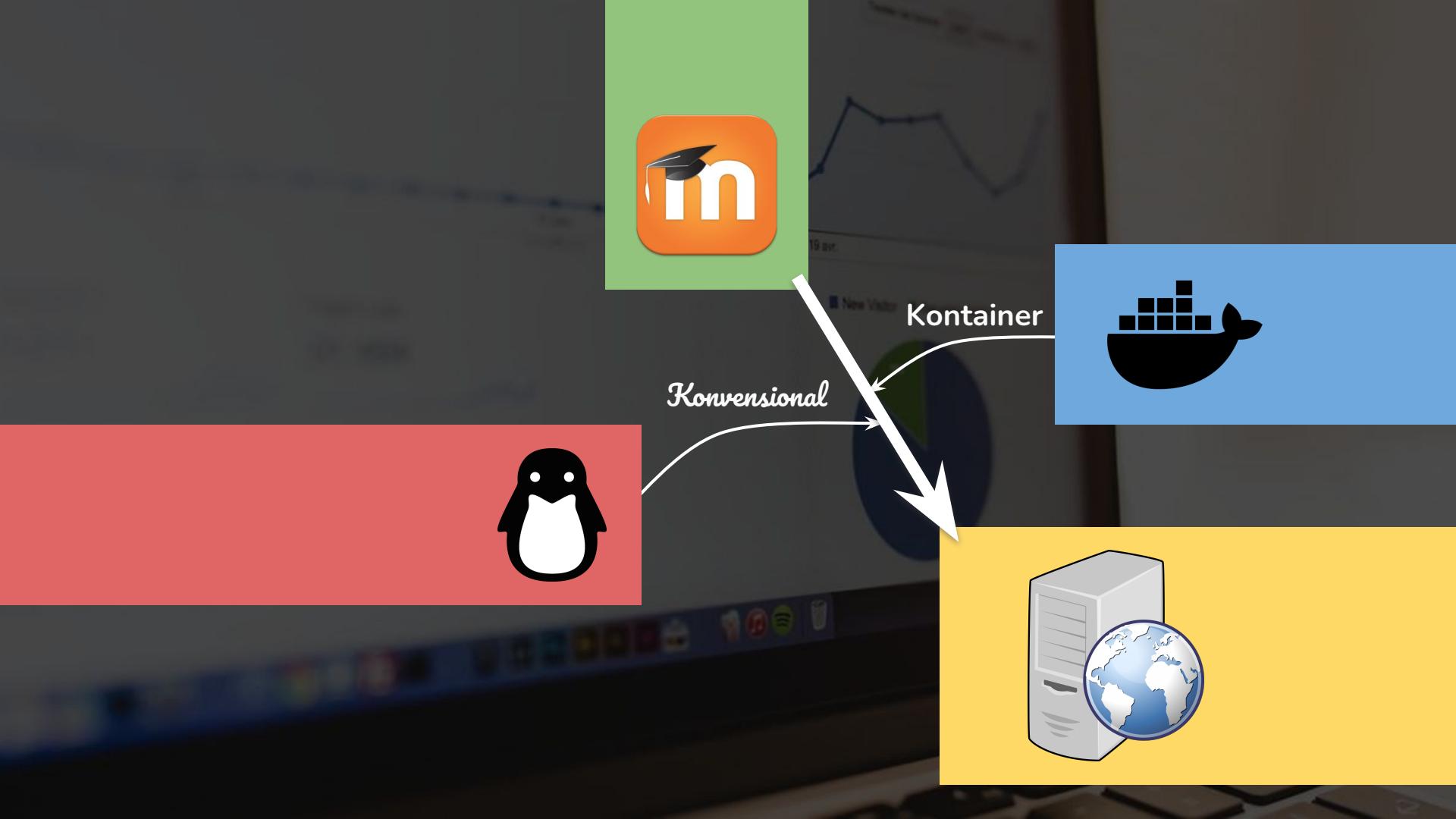
Andi Sugandi

Staf Pengajar
Universitas Siber Muhammadiyah



Pengajar Kelas PROA-DTS Kemkominfo RI 2020+2021: CKO
CKO: Container, Kubernetes, and Red Hat OpenShift







Diaduk



Tidak diaduk

Bubur Diaduk VS Tidak Diaduk

Manakah yang lebih superior menurut sains?

Bubur Diaduk

Kelebihan:

- Lebih mudah dicerna
- Lebih mudah sampai ke lambung
- Semua rasa tercampur sempurna
- Memudahkan orangtua dan anak kecil

Kekurangan:

- Tidak estetik
- Mengurangi nafsu makan sebagian besar orang

Bubur Tidak Diaduk

Kelebihan:

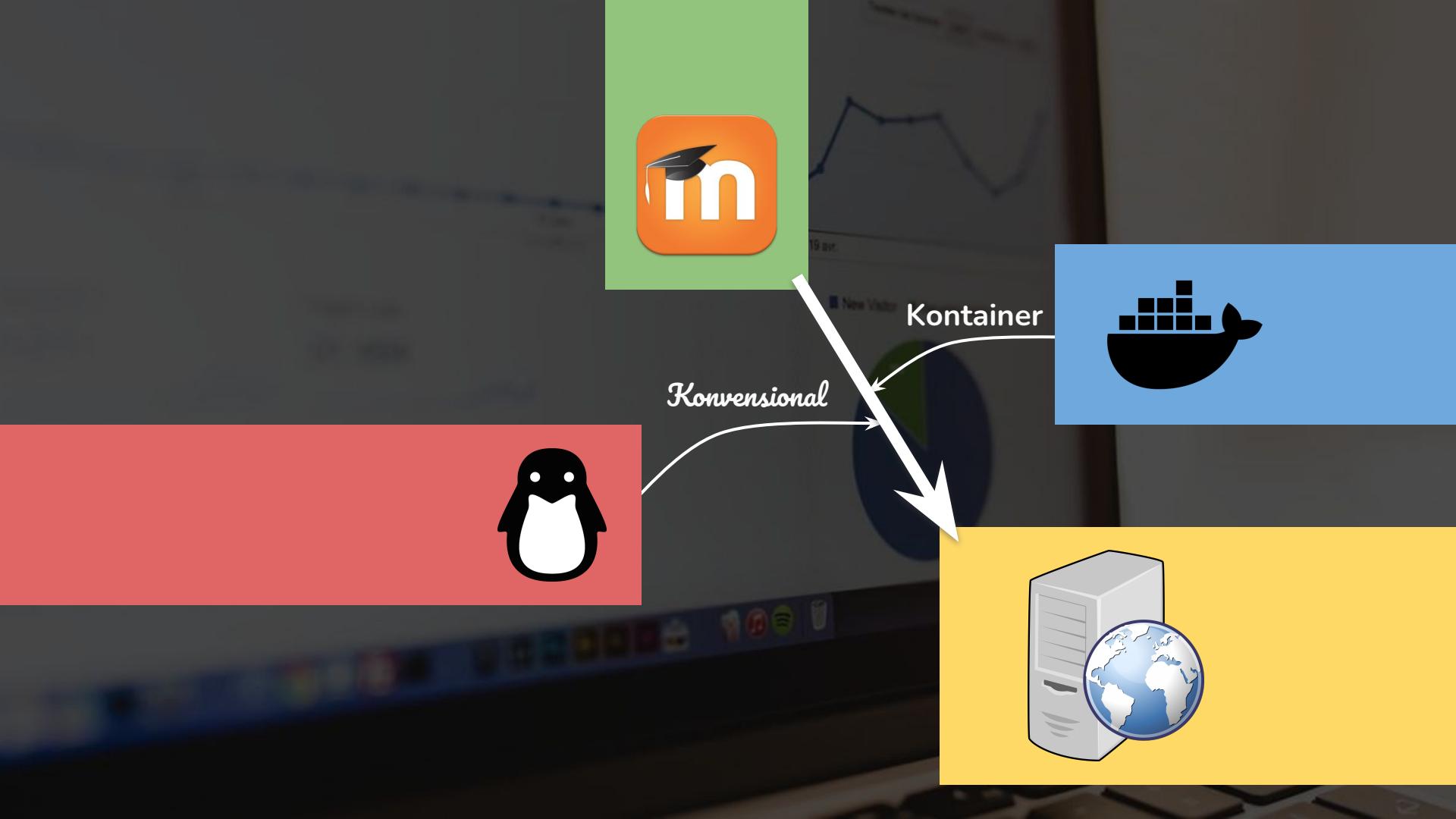
- Terlihat dan terjaga tetap estetik
- Meningkatkan nafsu makan sampai 30%
- Menambah sugesti rasa enak

Kekurangan:

- Rasa tidak tercampur sempurna
- Lebih susah dicerna, karena tidak lembut
- Orangtua dan anak kecil susah melahap

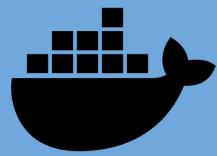


Berdasarkan penelitian ilmiah, pemenangnya adalah: "Bubur yang Diaduk!"





Manakah yang terbaik?



Manakah yang terbaik?

- 1. *Bird's View* : Konvensional v.s Kontainer**
- 2. Memasang Moodle Cara Konvensional**
- 3. Memasang Moodle Berbasis Kontainer**



1. *Bird's View : Konvensional v.s Kontainer*



1. Bird's View : Konvensional v.s Kontainer

APLIKASI



WEB SERVER

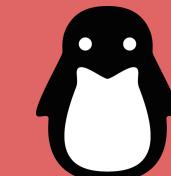
BASIS DATA

LIBRARY

RUNTIME APP

SISTEM OPERASI

SERVER



Konvensional

APLIKASI



WEB SERVER

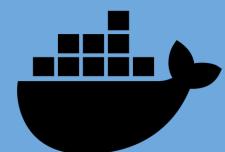
BASIS DATA

LIBRARY

RUNTIME APP

SISTEM OPERASI

SERVER



Kontainer

1. Sediakan Server (VPS)

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL

3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
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4. Unduh Kode Moodle

5. Pasang Sertifikat SS

6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



Konvensional

1. Sediakan Server (VPS)

2. Pasang Mesin Kontainer (Docker)
+ Jalankan Docker Swarm (jika perlu)

3. Konfigurasi Load Balancer & SSL via Traefik

4. Konfigurasi *Image* Kontainer:
a. *Persistent Volume* Moodle & moodledata
b. *Persistent Volume* MariaDB

5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

7. Optimasi (jika perlu)



Kontainer



2. Memasang Moodle Cara Konvensional



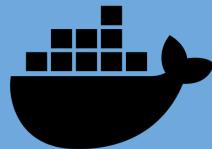
Manakah yang
terbaik?

Memasang Moodle Cara Konvensional



Manakah yang
terbaik?

Memasang Moodle Berbasis Kontainer



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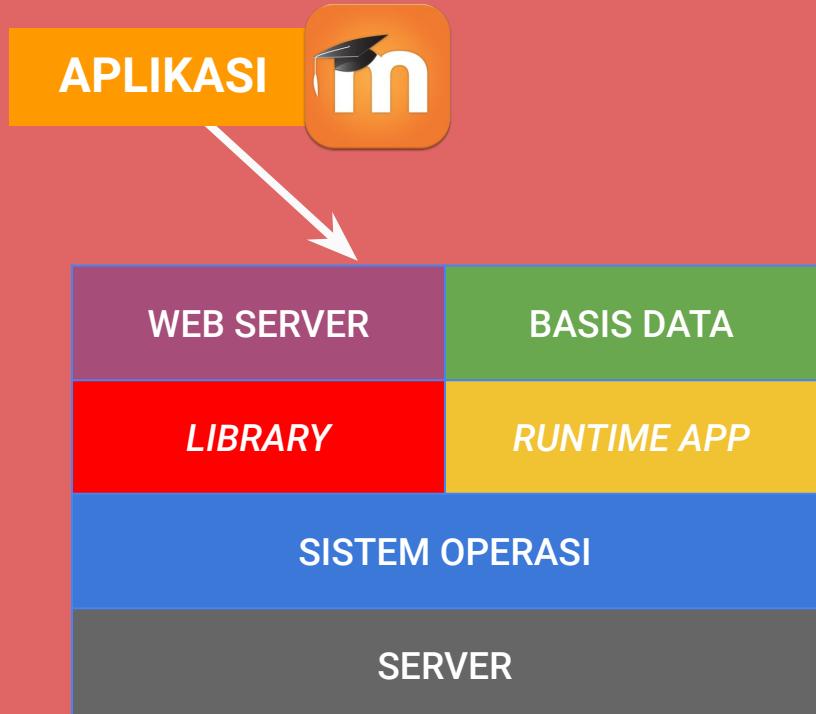
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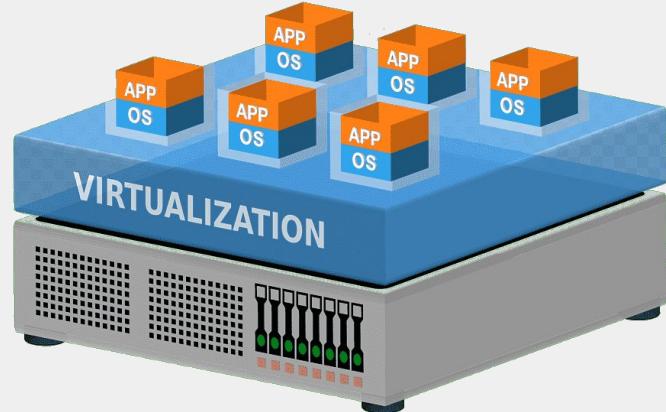
- a. Web Server (Apache/Nginx)
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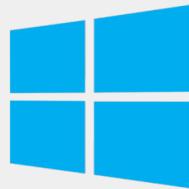
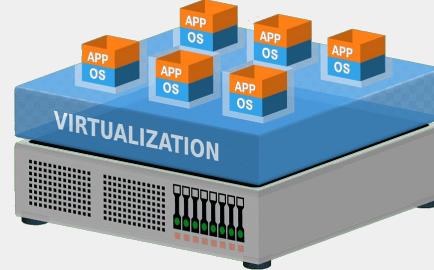
6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



<https://www.pngwing.com/id/free-png-virxq>

1. Sediakan Server (VPS)



Microsoft
Hyper-v

X PROXMOX



Konvensional

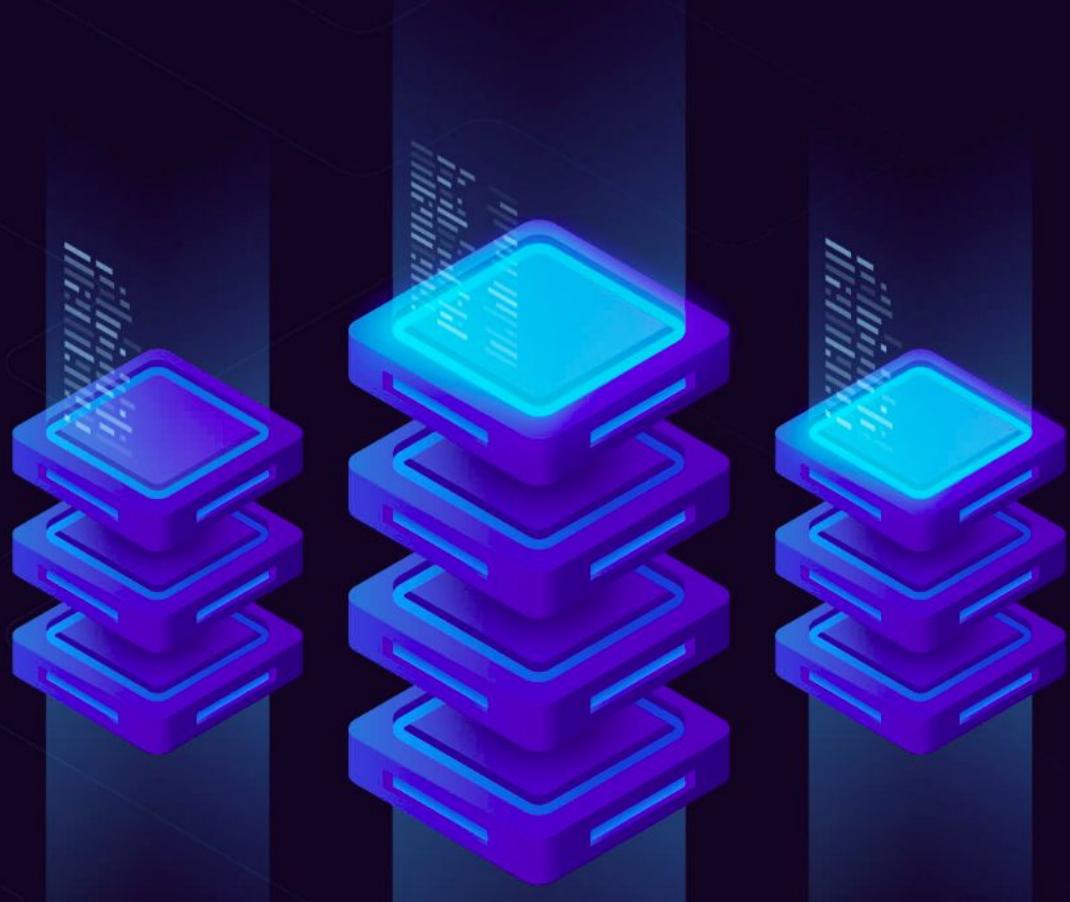
jagoanhosting.com/cloud-vps-indonesia

Cloud VPS Terbaik Indonesia

Satu-satunya Cloud VPS dengan price performance terbaik di Indonesia. Karena kami tahu, bahwa dalam level bisnis Anda sekarang, **Return of Investment** adalah yang paling penting.

BELI SEKARANG

BANDINGKAN PERFORMA



1. Sediakan Server (VPS)



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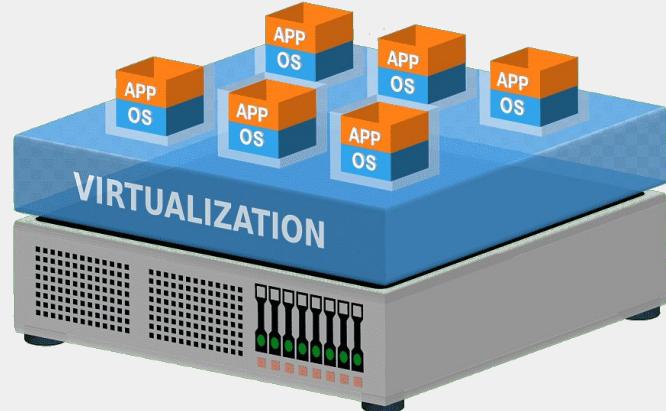
5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



Konvensional



1. Sediakan Server (VPS)



2. Pasang Paket:

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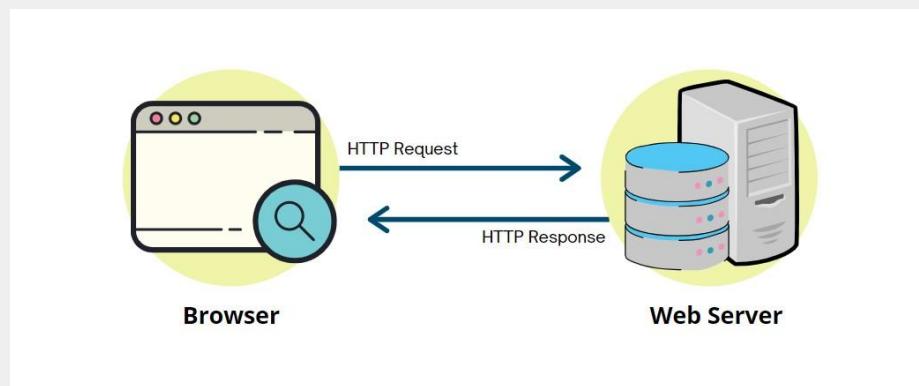
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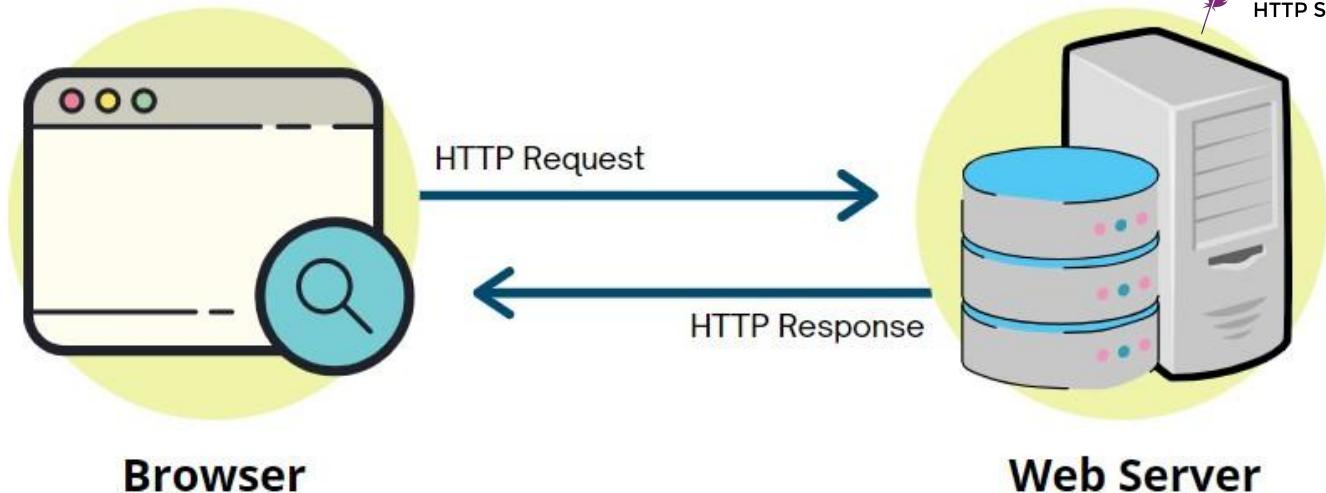
6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



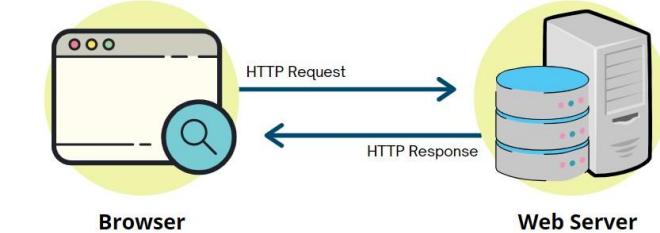
Konvensional





2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo yum update
```

#setelah ini, *restart* VPS jika diperlukan.

```
$ sudo yum install httpd httpd-tools
```

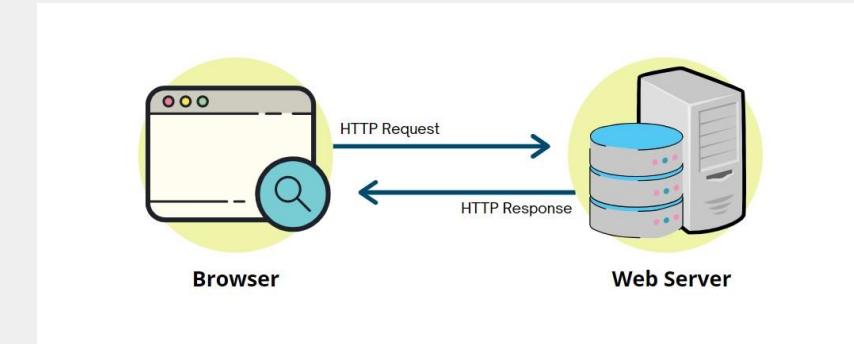
```
$ sudo systemctl enable --now httpd
```

```
$ sudo systemctl status httpd
```



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



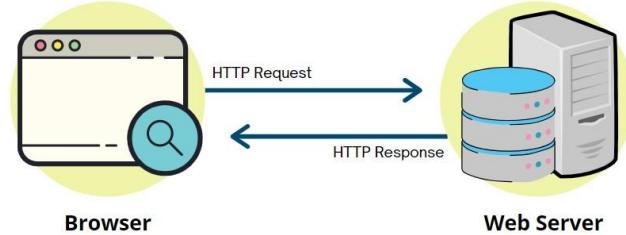
```
$ sudo yum install firewalld  
$ sudo systemctl enable --now firewalld  
  
$ sudo firewall-cmd --permanent \  
--add-interface=eth0 --zone=public
```



Konvensional

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo firewall-cmd --permanent \
--add-service={http,https} --zone=public
```

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

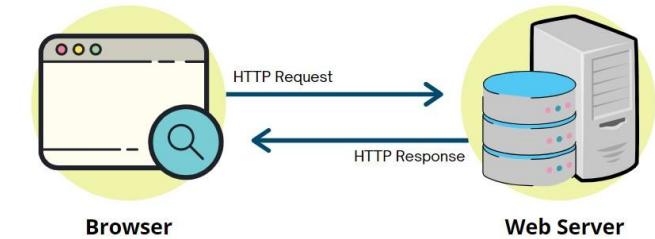
```
$ sudo firewall-cmd --list-all --zone=public
```



Konvensional

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
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http://Alamat_IP



Test Page

This page is used to test the proper operation of the [Apache HTTP server](#) after it has been installed. If you can read this page it means that this site is working properly. This server is powered by [CentOS](#).

Just visiting?

The website you just visited is either experiencing problems or is undergoing routine maintenance.

If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.

For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".

Important note:

The CentOS Project has nothing to do with this website or its content, it just provides the software that makes the website run.

If you have issues with the content of this site, contact the owner of the domain, not the CentOS project. Unless you intended to visit CentOS.org.

Are you the Administrator?

You should add your website content to the directory `/var/www/html/`.

To prevent this page from ever being used, follow the instructions in the file `/etc/httpd/conf.d/welcome.conf`.

Promoting Apache and CentOS

You are free to use the images below on Apache and CentOS Linux powered HTTP servers. Thanks for using Apache and CentOS!



The CentOS Project

The CentOS Linux distribution is a stable, predictable, manageable and

<https://www.digitalocean.com/community/tutorials/how-to-install-the-apache-web-server-on-centos-8>



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

a. Web Server (Apache/Nginx)



b. Modul PHP

c. Data Base MariaDB / PostgreSQL

3. Konfigurasi:

a. Web Server (Apache/Nginx)

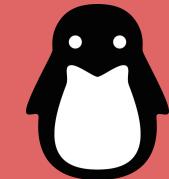
b. Modul PHP

c. Data Base MariaDB / PostgreSQL

4. Unduh Kode Moodle

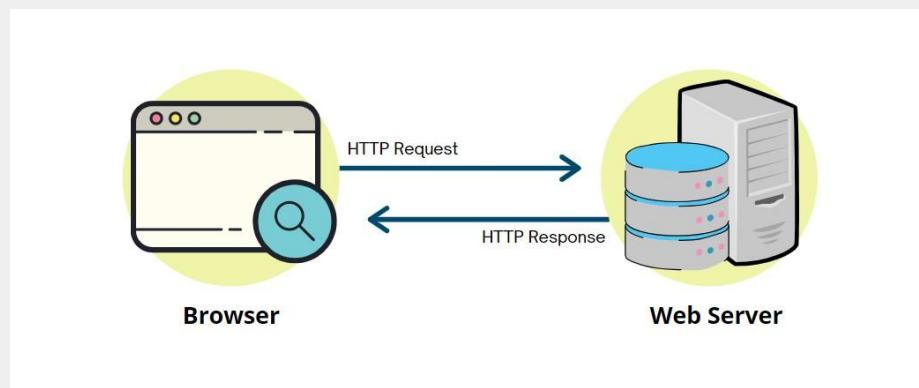
5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS



Konvensional

7. Optimasi (jika perlu)



1. Sediakan Server (VPS)



2. Pasang Paket:

a. Web Server (Apache/Nginx)



b. Modul PHP

c. Data Base MariaDB / PostgreSQL

3. Konfigurasi:

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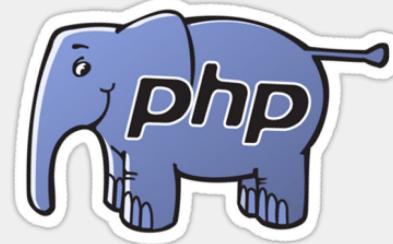
Konvensional



<https://www.cleanpng.com/png-php-logo-programmer-computer-software-it-sticker-1721078/>

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP**
- c. Data Base MariaDB / PostgreSQL



```
$ sudo rpm -Uvh https://dl.fedoraproject.org \
/pub/epel/epel-release-latest-7.noarch.rpm
```

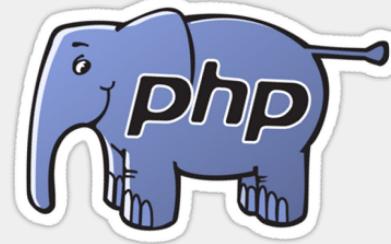
```
$ sudo rpm -Uvh http://rpms.remirepo.net \
/enterprise/remi-release-7.rpm
```



Konvensional

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP**
- c. Data Base MariaDB / PostgreSQL



Jika paket `php` tidak ditemukan,
maka ganti: **remi-php73**

```
$ sudo yum-config-manager --enable remi-php74
```

```
$ sudo yum install php php-fpm php-cli php-pspell \
  php-curl php-gd php-intl php-mysqlnd php-xml \
  php-xmlrpc php-ldap php-zip php-json php-soap \
  php-opcache php-readline php-mbstring php-sodium
```



Konvensional

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP**
- c. Data Base MariaDB / PostgreSQL



```
# echo '<?php phpinfo(); ?>' > \
    /var/www/html/info.php
```

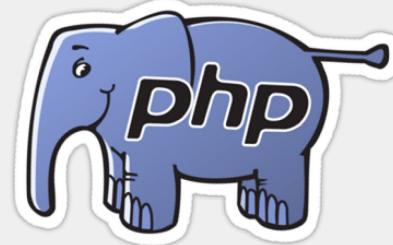
```
$ sudo systemctl restart httpd
```



Konvensional

2. Pasang Paket:

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The screenshot shows a web browser window with the URL <http://101.50.0.20/info.php>. The page displays detailed information about the PHP installation, including the version (7.4.23), build date (Aug 24 2021 16:33:30), and various configuration details.

System	Linux server.dsdpjh.com 3.10.0-1160.36.2.el7.x86_64 #1 SMP Wed Jul 21 11:57:15 UTC 2021 x86_64
Build Date	Aug 24 2021 16:33:30
Build System	Red Hat Enterprise Linux Server release 7.9 (Maipo)
Build Provider	Remi's RPM repository < https://rpms.remirepo.net/ >
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/10-opcache.ini, /etc/php.d/20-bz2.ini, /etc/php.d/20-calendar.ini, /etc/php.d/20-ctype.ini, /etc/php.d/20-curl.ini, /etc/php.d/20-dom.ini, /etc/php.d/20-exif.ini, /etc/php.d/20-fileinfo.ini, /etc/php.d/20-ftp.ini, /etc/php.d/20-gd.ini, /etc/php.d/20-gettext.ini, /etc/php.d/20-iconv.ini,



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

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3. Konfigurasi:

- a. Web Server (Apache/Nginx)
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4. Unduh Kode Moodle

5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS



7. Optimasi (jika perlu)



<https://mariadb.com/about-us/logos/>

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo vim /etc/yum.repos.d/MariaDB.repo
```

```
[mariadb]
```

```
name = MariaDB
```

```
baseurl = http://yum.mariadb.org/10.5/centos7-amd64
```

```
gpgkey = https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
```

```
gpgcheck=1
```



Konventional

2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo yum install MariaDB-server MariaDB-client
```



Konventional

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
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Konvensional



[https://id.wikipedia.org/wiki/Berkas:Apache_HTTP_server_logo_\(2019-present\).svg](https://id.wikipedia.org/wiki/Berkas:Apache_HTTP_server_logo_(2019-present).svg)

3. Konfigurasi:

a. Web Server (Apache/Nginx)

b. Modul PHP

c. Data Base MariaDB / PostgreSQL



```
$ sudo vim /etc/httpd/conf.d/ \
web1.namasekolah.com.conf
```



Konvensional

3. Konfigurasi:

a. Web Server (Apache/Nginx)

- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
<VirtualHost *:80>
    ServerName web1.namasekolah.com
    DocumentRoot /var/www/html/moodle
    DirectoryIndex index.html index.htm index.php index.php4 index.php5
    <Directory /var/www/html/moodle>
        Options -Indexes +IncludesNOEXEC +SymLinksIfOwnerMatch
        Allow from all
        AllowOverride All
    </Directory>
    ErrorLog /var/log/httpd/web1.namasekolah.com_error_log
    CustomLog /var/log/httpd/web1.namasekolah.com_access_log combined
</VirtualHost>
```



Konvensional

3. Konfigurasi:

- a. Web Server (Apache/Nginx)
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```
$ sudo systemctl reload httpd
```



Konventional

1. Sediakan Server (VPS)



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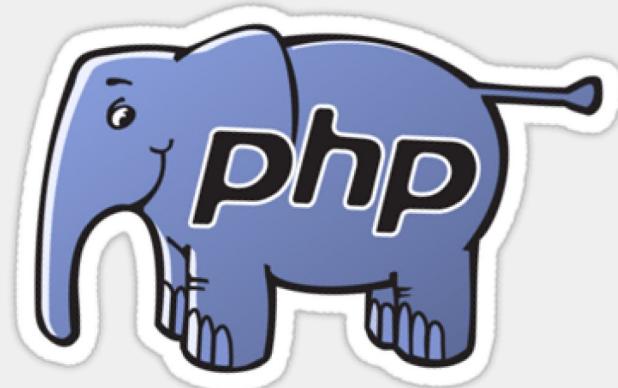
5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS



Konvensional

7. Optimasi (jika perlu)



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo vim /etc/php.ini
```

```
max_input_vars = 10000
```

```
$ sudo systemctl restart httpd
```



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
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7. Optimasi (jika perlu)

Konvensional



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7. Optimasi (jika perlu)



Konvensional



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo vim /etc/my.cnf.d/server.cnf
```

```
[mysqld]
```

```
innodb_file_per_table = 1
```

```
character-set-server = utf8mb4
```

```
collation-server = utf8mb4_unicode_ci
```

```
skip-character-set-client-handshake
```



Konventional

3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
$ sudo systemctl enable --now mariadb
```

```
$ sudo mysql_secure_installation
```

```
$ mysql -u root -p
```



Konventional

3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



```
> CREATE DATABASE moodledb DEFAULT CHARACTER \
    SET utf8mb4 COLLATE utf8mb4_unicode_ci;

> CREATE USER 'moodleuser'@'localhost' \
    IDENTIFIED BY 't4ny4adm1n';
```



Konvensional

3. Konfigurasi:

- a. Web Server (Apache/Nginx)
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- c. Data Base MariaDB / PostgreSQL



```
> GRANT ALL ON moodledb.* \n  
      TO 'moodleuser'@'localhost';\n\n> FLUSH PRIVILEGES;
```



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



4. Unduh Kode Moodle

5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



Konvensional



1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
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- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL

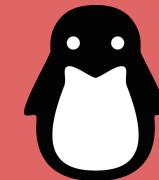


4. Unduh Kode Moodle

5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



Konvensional



<https://commons.wikimedia.org/wiki/File:Moodle-logo.svg>

4. Unduh Kode Moodle



```
$ sudo yum install git
```

```
$ cd /var/www/html
```

```
$ sudo git clone https://github.com/moodle/moodle.git
```

```
$ cd moodle
```



Konvensional

4. Unduh Kode Moodle



```
$ git branch -a
```

```
$ sudo git branch --track MOODLE_311_STABLE \  
origin/MOODLE_311_STABLE
```

```
$ sudo git checkout MOODLE_311_STABLE
```



Konvensional

4. Unduh Kode Moodle



```
$ sudo mkdir /var/moodledata
```

```
$ sudo chown apache:apache -R /var/moodledata \
    /var/www/html/moodle
```

```
$ sudo chmod 777 /var/moodledata
```



Konvensional

4. Unduh Kode Moodle

4.1 Akses “Tulis” Web Server Apache ke Direktori moodle & moodledata



```
$ sudo semanage fcontext -at httpd_sys_rw_content_t \
    '/var/www/moodle(/.*)?'
$ sudo restorecon -Rv '/var/www/moodle/'

$ sudo semanage fcontext -at httpd_sys_rw_content_t \
    '/var/moodledata(/.*)?'
$ sudo restorecon -Rv '/var/moodledata/'
```



1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



4. Unduh Kode Moodle



5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS

7. Optimasi (jika perlu)



Konvensional

moodle

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



4. Unduh Kode Moodle



5. Pasang Sertifikat SSL

6. Pasang Moodle di VPS



Konvensional

7. Optimasi (jika perlu)



4. Pasang Sertifikat SSL



<https://fledglingonlinebizowners.com/how-to-add-an-ssl-certificate-to-your-website-1-e-getting-https-before-your-domain-name/>



Konvensional

4. Pasang Sertifikat SSL



```
$ sudo yum install certbot mod_ssl \
python2-certbot-apache
```

```
$ sudo certbot --apache
```



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



4. Unduh Kode Moodle



5. Pasang Sertifikat SSL



6. Pasang Moodle di VPS



Konvensional

7. Optimasi (jika perlu)



1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



4. Unduh Kode Moodle



5. Pasang Sertifikat SSL



6. Pasang Moodle di VPS



Konvensional

moodle

7. Optimasi (jika perlu)

4. Pasang Moodle di VPS



A screenshot of a web browser showing the Moodle installation process. The URL in the address bar is <https://web1.namasekolah.com/install.php>. The page title is "Installation". A "Language" section is highlighted, containing the sub-section "Choose a language". A note below says, "Please choose a language for the installation. This language will also be used as the default language for the site, though it may be changed later." A dropdown menu shows "English (en)" selected. At the bottom is a blue "Next »" button. The Moodle logo is at the bottom center.



Konvensional

4. Pasang Moodle di VPS



A screenshot of a web browser window displaying the Moodle login page. The URL in the address bar is https://web1.namasekolah.com/. The page header shows the Moodle logo and navigation links. The main content area displays the text "Sekolah Jagoan Hosting". A message at the top right says "You are not logged in. (Log in)".



Konvensional

1. Sediakan Server (VPS)



2. Pasang Paket:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



3. Konfigurasi:

- a. Web Server (Apache/Nginx)
- b. Modul PHP
- c. Data Base MariaDB / PostgreSQL



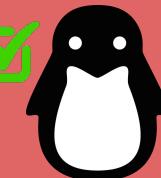
4. Unduh Kode Moodle



5. Pasang Sertifikat SSL



6. Pasang Moodle di VPS



Konvensional

moodle

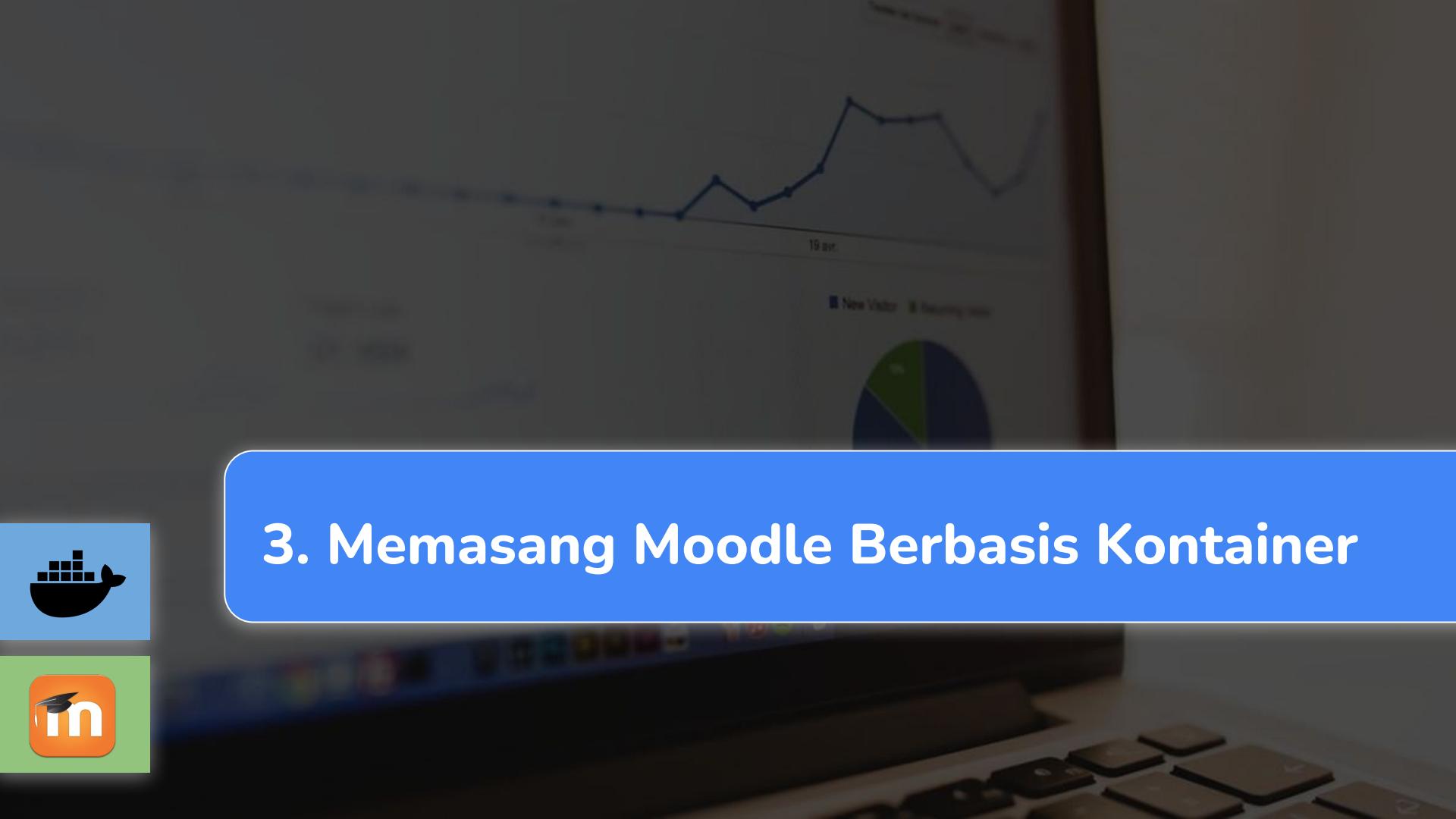
7. Optimasi (jika perlu)



2. Memasang Moodle Cara Konvensional

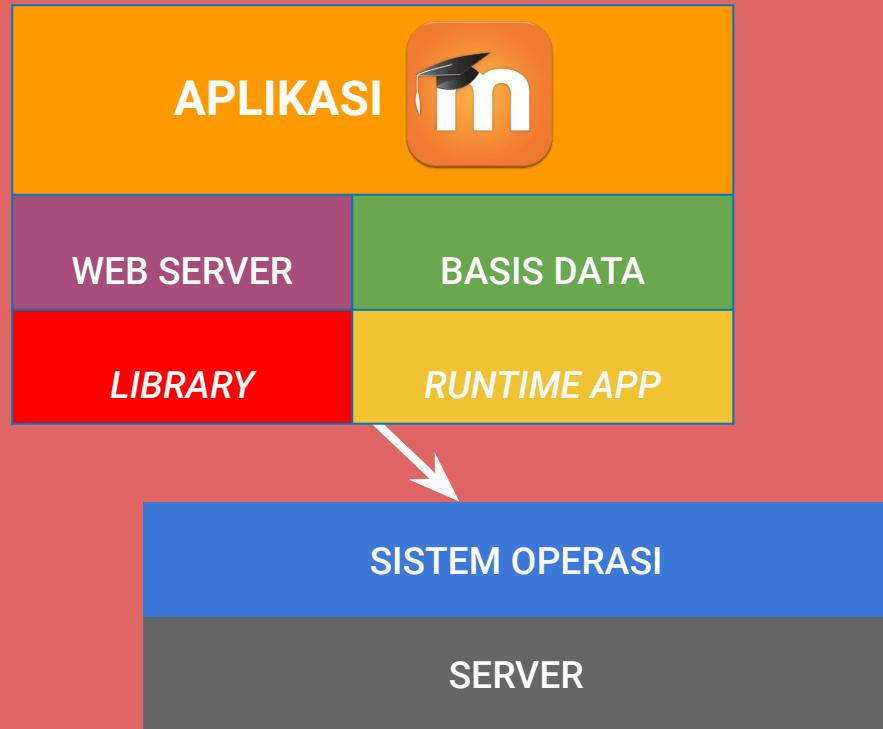
Streamed live on Aug 26, 2021: <https://youtu.be/G2qoDaS4g0g>





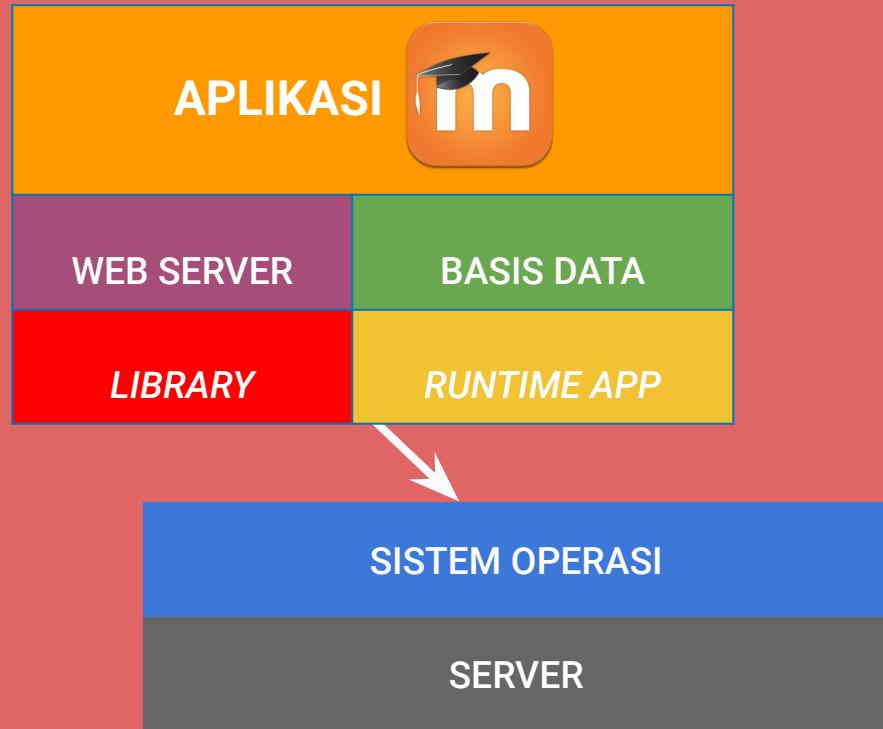
3. Memasang Moodle Berbasis Kontainer





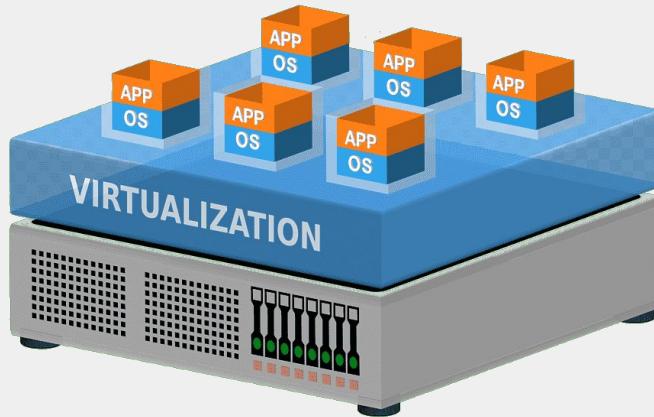
1. Sediakan Server (VPS)
2. Pasang Mesin Kontainer (Docker)
~~+ Jalankan Docker Swarm (jika perlu)~~
3. Konfigurasi Load Balancer & SSL via Traefik
4. Konfigurasi *Image* Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)





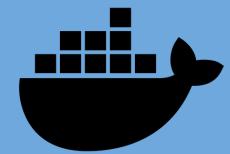
1. Sediakan Server (VPS)
2. Pasang Mesin Kontainer (Docker) + Pasang Docker Compose
3. Konfigurasi Load Balancer & SSL via Traefik
4. Konfigurasi *Image* Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)





1. Sediakan Server (VPS)

2. Pasang Mesin Kontainer (Docker)
3. Konfigurasi Load Balancer & SSL via Traefik
4. Konfigurasi *Image* Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)



Kontainer



1. Sediakan Server (VPS)

2. Pasang Mesin Kontainer (Docker)

3. Konfigurasi Load Balancer & SSL via Traefik

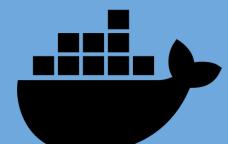
4. Konfigurasi *Image* Kontainer:

- Persistent Volume Moodle & moodledata
- Persistent Volume MariaDB

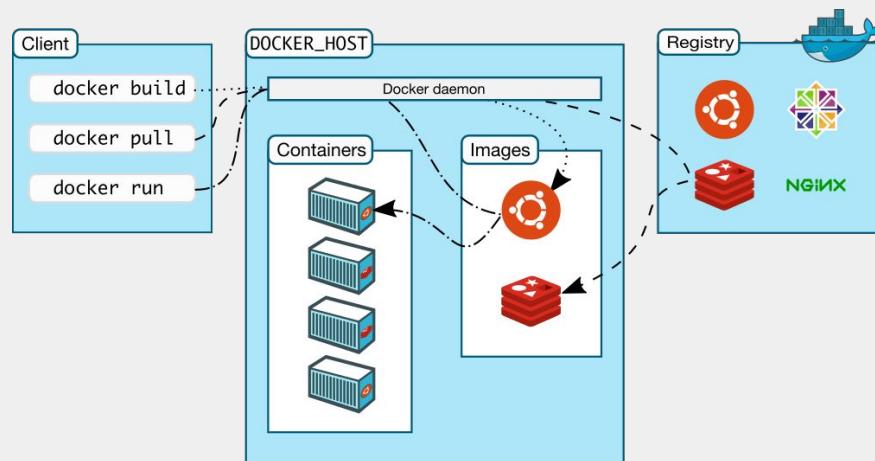
5. Jalankan Kontainer Traefik

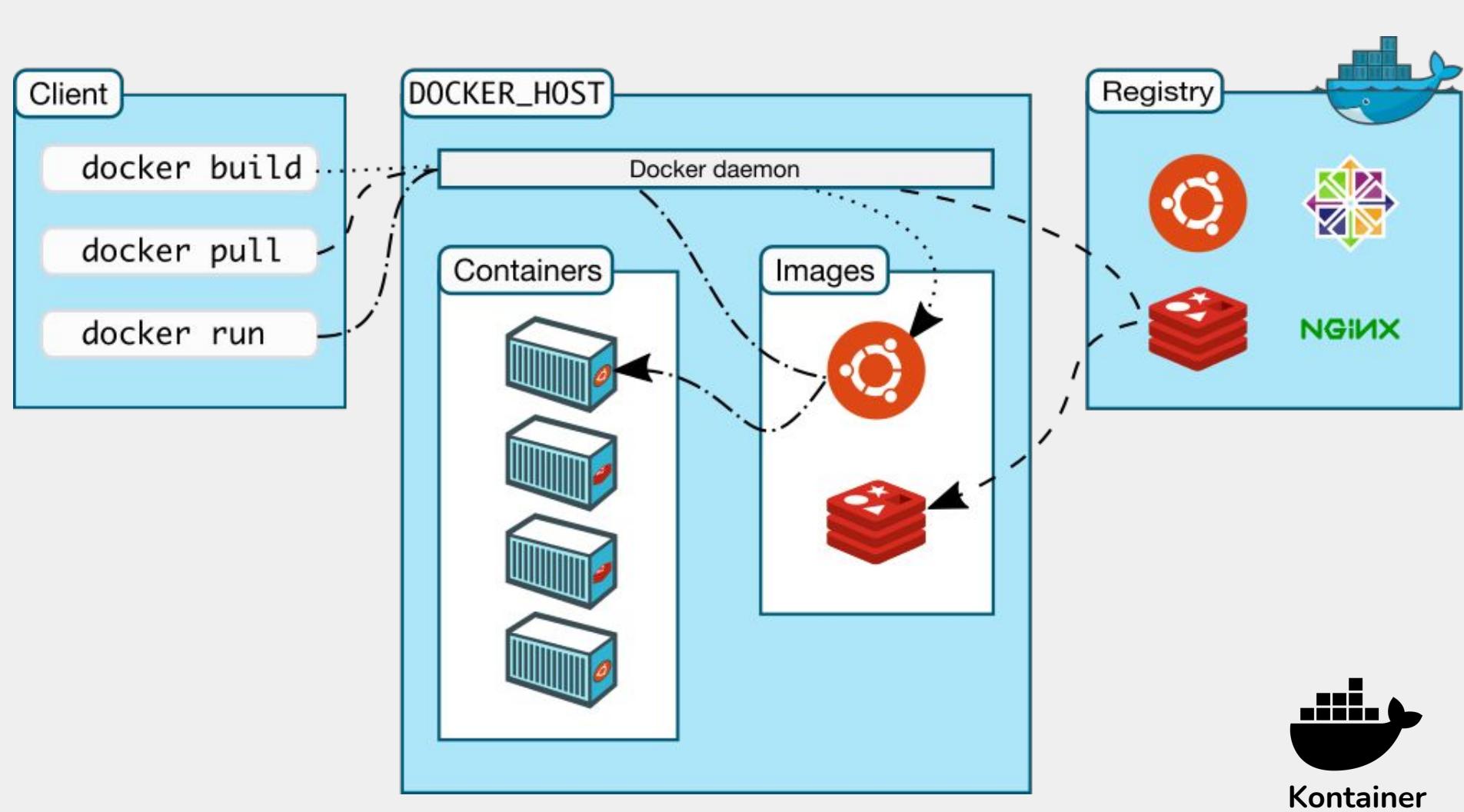
6. Jalankan Kontainer Moodle

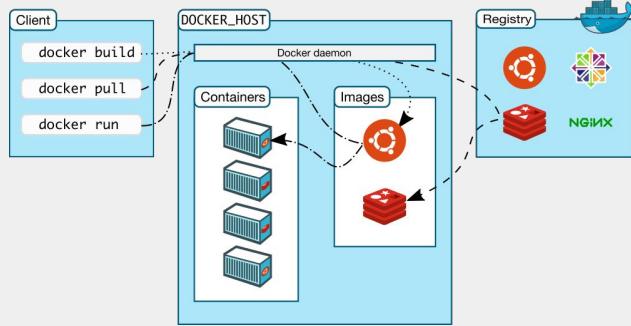
7. Optimasi (jika perlu)



Kontainer





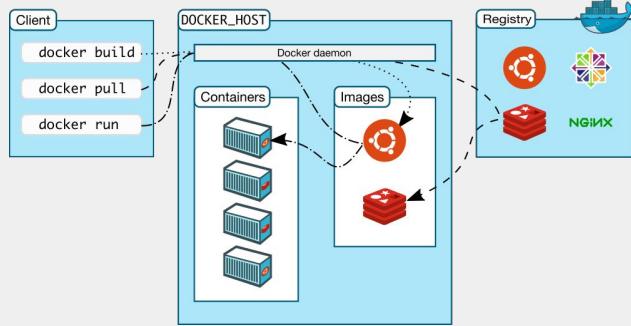


2. Pasang Mesin Kontainer (Docker)

```
$ sudo yum remove docker docker-client  
docker-client-latest docker-common docker-latest \  
docker-latest-logrotate docker-logrotate \  
docker-engine
```

```
$ sudo yum install yum-utils
```



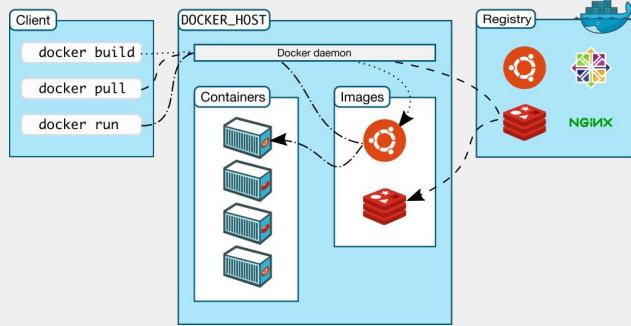


2. Pasang Mesin Kontainer (Docker)

```
$ sudo yum-config-manager --add-repo \
https://download.docker.com/linux/centos/docker-ce.repo
```

```
$ sudo yum install docker-ce docker-ce-cli containerd.io
```





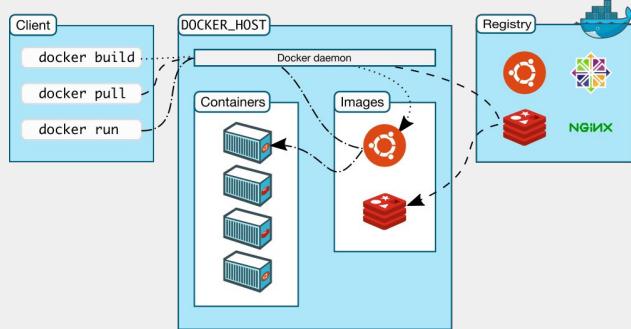
2. Pasang Mesin Kontainer (Docker)

```
$ sudo systemctl enable --now docker
```

```
$ sudo usermod -aG docker $USER
```

#setelah ini, *logout* lalu *login* kembali.





2. Pasang Mesin Kontainer (Docker)

+ Pasang Docker Compose

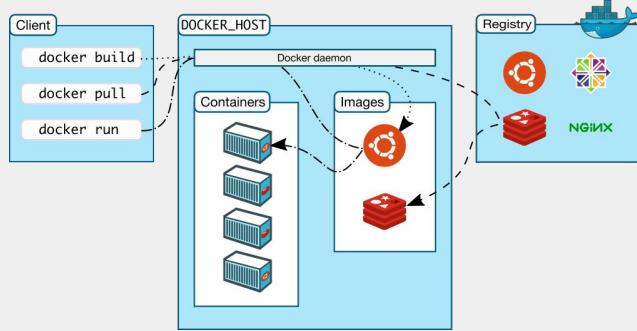
```
$ sudo curl -L "https://github.com/docker/compose/releases/ \
  download/1.29.2/docker-compose-$(uname -s)-$(uname -m)" \
-o /usr/local/bin/docker-compose
```

```
$ sudo chmod +x /usr/local/bin/docker-compose
```

```
$ sudo ln -s /usr/local/bin/docker-compose \
  /usr/bin/docker-compose
```



Kontainer



2. Pasang Mesin Kontainer (Docker)

+ Pasang Docker Compose

```
$ sudo systemctl restart docker
```

```
$ docker --version
```

```
$ docker-compose --version
```





1. Sediakan Server (VPS)

2. Pasang Mesin Kontainer (Docker)

3. Konfigurasi Load Balancer & SSL via Traefik

4. Konfigurasi *Image* Kontainer:

- Persistent Volume Moodle & moodledata
- Persistent Volume MariaDB

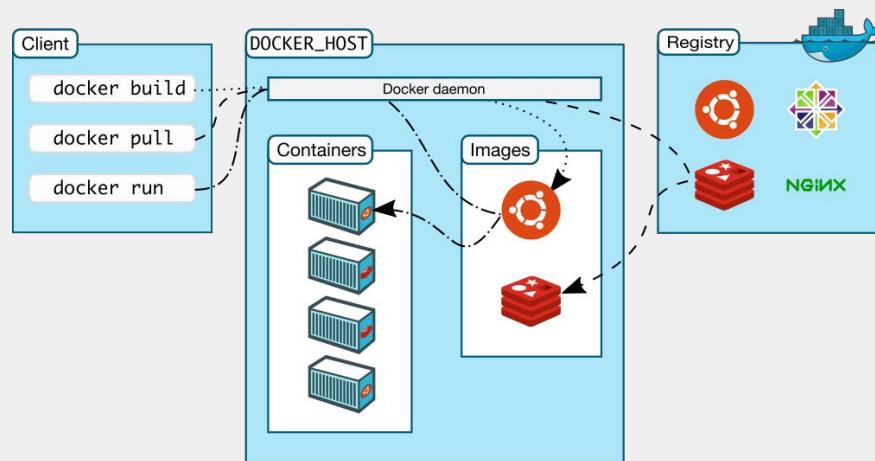
5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

7. Optimasi (jika perlu)

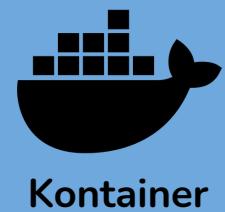


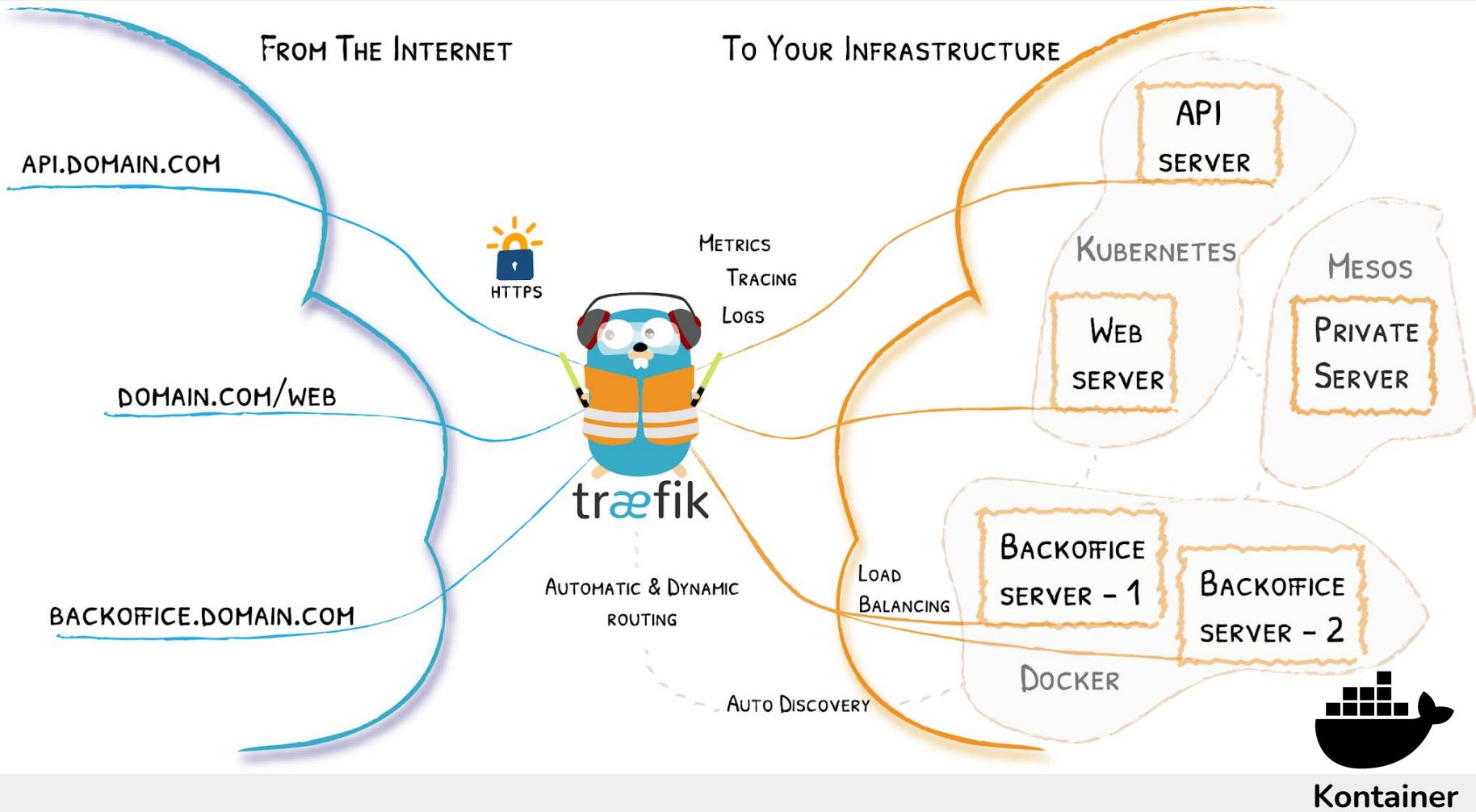
Kontainer





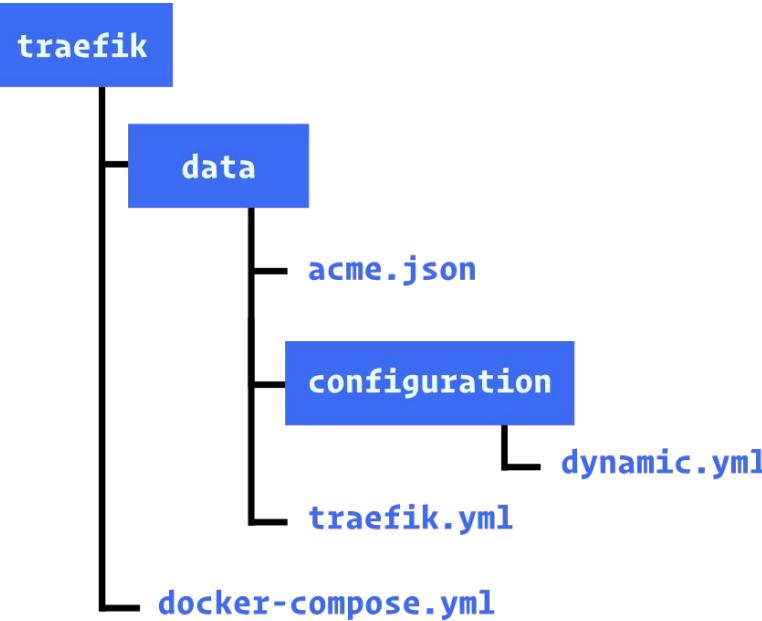
1. Sediakan Server (VPS) 
2. Pasang Mesin Kontainer (Docker) 
- 3. Konfigurasi Load Balancer & SSL via Traefik**
4. Konfigurasi Image Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)







3. Konfigurasi Load Balancer & SSL via Traefik



```
$ mkdir ~/traefik && cd ~/traefik  
$ mkdir -p data/configuration  
$ touch docker-compose.yml  
$ touch data/acme.json  
$ touch data/configuration/dynamic.yml  
$ touch data/traefik.yml  
$ chmod 600 data/acme.json
```



Kontainer



3. Konfigurasi Load Balancer & SSL via Traefik

docker-compose.yml

```
version: '3.9'

services:
  traefik:
    image: traefik:v2.4
    container_name: traefik
    restart: always
    security_opt:
      - no-new-privileges:true
    ports:
      - 80:80
      - 443:443
    volumes:
      - /etc/localtime:/etc/localtime:ro
      - /var/run/docker.sock:/var/run/docker.sock:ro
      - ./data/traefik.yml:/traefik.yml:ro
      - ./data/acme.json:/acme.json
      # Add folder with dynamic configuration yml
      - ./data/configurations:/configurations
```

```
networks:
  - proxy
labels:
  - "traefik.enable=true"
  - "traefik.docker.network=proxy"
  - "traefik.http.routers.traefik-secure.entrypoints=websecure"
  - "traefik.http.routers.traefik-secure.rule=Host(`web1.namasekolah.com`)"
  - "traefik.http.routers.traefik-secure.middlewares=user-auth@file"
  - "traefik.http.routers.traefik-secure.service=api@internal"
  - "traefik.http.services.traefik-service.loadbalancer.server.port=8080"
```

```
networks:
  proxy:
    external: true
```



Kontainer



3. Konfigurasi Load Balancer & SSL via Traefik

data/traefik.yml

```
api:
  dashboard: true

log:
  level: DEBUG

entryPoints:
  web:
    address: :80
    http:
      redirections:
        entryPoint:
          to: websecure
  websecure:
    address: :443
    http:
      middlewares:
        - secureHeaders@file
        - nofloc@file
      tls:
        certResolver: letsencrypt

pilot:
  dashboard: false
```

```
providers:
  docker:
    endpoint: "unix:///var/run/docker.sock"
    exposedByDefault: false
  file:
    filename: /configurations/dynamic.yml

certificatesResolvers:
  letsencrypt:
    acme:
      email: andi@sibermu.ac.id
      storage: acme.json
      keyType: EC384
      httpChallenge:
        entryPoint: web
  buypass:
    acme:
      email: andi@sibermu.ac.id
      storage: acme.json
      caServer: https://api.buypass.com/acme/directory
      keyType: EC256
      httpChallenge:
        entryPoint: web
```



Kontainer



3. Konfigurasi Load Balancer & SSL via Traefik

data/configurations/dynamic.yml

```
http:  
  middlewares:  
    nofloc:  
      headers:  
        customResponseHeaders:  
          Permissions-Policy: "interest-cohort=()"  
  secureHeaders:  
    headers:  
      sslRedirect: true  
      forceSTSHeader: true  
      stsIncludeSubdomains: true  
      stsPreload: true  
      stsSeconds: 31536000
```

```
# UserName : admin  
# Password : # dapatkan dengan bantuan "htpasswd"  
  
user-auth:  
  basicAuth:  
    users:  
      - "admin:$apr1$ntilzY14$fDIINe9XxjPnVV6kt1V.1/"
```

```
tls:  
  options:  
    default:  
      cipherSuites:  
        - TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384  
        - TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384  
        - TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256  
        - TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256  
        - TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305  
        - TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305  
  minVersion: VersionTLS12
```



Kontainer



3. Konfigurasi Load Balancer & SSL via Traefik

```
$ htpasswd -nb admin passwordUntukUserAdmin
```

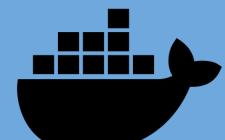
```
admin:$apr1$ntilzY14$fDIINe9XxjPnVV6kt1V.1/
```

```
$ docker network create proxy
```

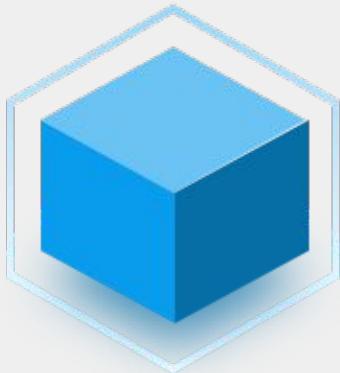




1. Sediakan Server (VPS) 
2. Pasang Mesin Kontainer (Docker) 
- 3. Konfigurasi Load Balancer & SSL via Traefik** 
4. Konfigurasi Image Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)



Kontainer



1. Sediakan Server (VPS)



2. Pasang Mesin Kontainer (Docker)



3. Konfigurasi Load Balancer & SSL via Traefik



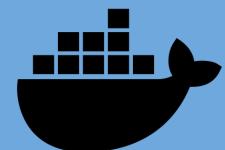
4. Konfigurasi *Image* Kontainer:

- Persistent Volume Moodle & moodledata
- Persistent Volume MariaDB

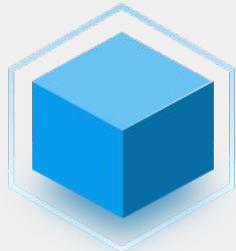
5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

7. Optimasi (jika perlu)



Kontainer



4. Konfigurasi *Image* Kontainer:

```
$ mkdir ~/moodle
```

```
$ cd ~/moodle
```

```
$ vim docker-compose.yml
```



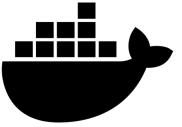
Kontainer



```
version: '3.9'
services:
  mariadb:
    image: 'docker.io/bitnami/mariadb:10.5-debian-10'
    container_name: mariadb
    environment:
      - MARIADB_ROOT_PASSWORD=jagoanhosting
      - MARIADB_USER=jagoanhostinguser
      - MARIADB_DATABASE=jagoanhostingdb
      - MARIADB_PASSWORD=jagoanhosting
      - MARIADB_CHARACTER_SET=utf8mb4
      - MARIADB_COLLATE=utf8mb4_unicode_ci
    networks:
      - moodlenetwork
    volumes:
      - 'moodle-mariadb:/bitnami/mariadb'
  moodle:
    image: 'docker.io/bitnami/moodle:3-debian-10'
    container_name: moodle
```

4. Konfigurasi Image Kontainer:

docker-compose.yml [1]

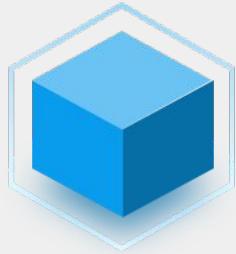


environment:

- MOODLE_DATABASE_HOST=mariadb
- MOODLE_DATABASE_PORT_NUMBER=3306
- MOODLE_DATABASE_USER=jagoanhostinguser
- MOODLE_DATABASE_NAME=jagoanhostingdb
- MOODLE_PASSWORD=jagoanhosting
- MOODLE_DATABASE_PASSWORD=jagoanhosting
- MOODLE_EMAIL=andi@sibermu.ac.id
- PHP_MEMORY_LIMIT=1024M
- PHP_POST_MAX_SIZE=1024M
- PHP_UPLOAD_MAX_FILESIZE=1024M
- PHP_MAX_EXECUTION_TIME=46800

labels:

- "traefik.enable=true"
- "traefik.docker.network=proxy"
- "traefik.http.routers.moodle-secure.entrypoints=websecure"
- "traefik.http.routers.moodle.entrypoints=web"
- "traefik.http.routers.moodle-secure.rule=Host(`web2.namasekolah.com`)"
- "traefik.http.routers.moodle.rule=Host(`web2.namasekolah.com`)"
- "traefik.http.routers.moodle-secure.tls.certResolver=letsencrypt"
- "traefik.http.routers.moodle-secure.service=moodle-service"
- "traefik.http.services.moodle-service.loadbalancer.server.port=8080"



4. Konfigurasi *Image* Kontainer:

docker-compose.yml [2]

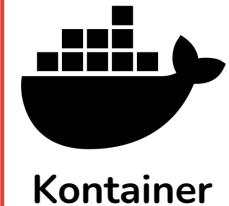
```
volumes:  
  - 'moodle_data:/bitnami/moodle'  
  - 'moodledata_data:/bitnami/moodledata'  
  
networks:  
  - moodlenetwork  
  - proxy  
  
depends_on:  
  - mariadb  
  
  
volumes:  
  moodle-mariadb:  
    driver: local  
  moodle_data:  
    driver: local  
  moodledata_data:  
    driver: local  
  
  
networks:  
  moodlenetwork:  
  proxy:  
    external: true
```

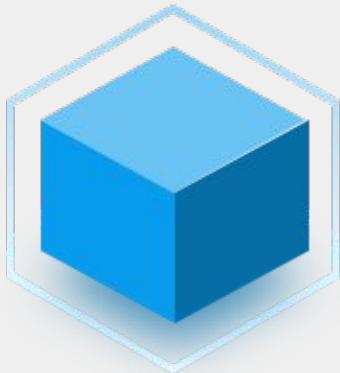
environment:
 - MARIADB_ROOT_PASSWORD=jagoanhosting
 - MARIADB_USER=jagoanhostinguser
 - MARIADB_DATABASE=jagoanhostingdb
 - MARIADB_PASSWORD=jagoanhosting

environment:
 - MOODLE_DATABASE_USER=jagoanhostinguser
 - MOODLE_DATABASE_NAME=jagoanhostingdb
 - MOODLE_PASSWORD=jagoanhosting
 - MOODLE_DATABASE_PASSWORD=jagoanhosting

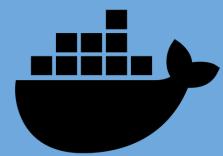
Untuk lingkungan **produksi**, ikuti panduan:

“Manage sensitive data with Docker secrets”
<https://docs.docker.com/engine/swarm/secrets>

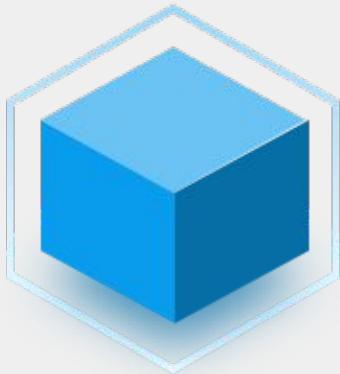




1. Sediakan Server (VPS) ✓
2. Pasang Mesin Kontainer (Docker) ✓
3. Konfigurasi Load Balancer & SSL via Traefik ✓
4. Konfigurasi *Image* Kontainer:
 - a. Persistent Volume Moodle & moodledata
 - b. Persistent Volume MariaDB
5. Jalankan Kontainer Traefik
6. Jalankan Kontainer Moodle
7. Optimasi (jika perlu)



Kontainer



1. Sediakan Server (VPS)



2. Pasang Mesin Kontainer (Docker)



3. Konfigurasi Load Balancer & SSL via Traefik



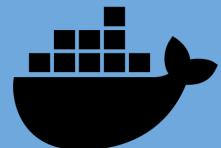
4. Konfigurasi *Image* Kontainer:

- a. Persistent Volume Moodle & moodledata
- b. Persistent Volume MariaDB

5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

7. Optimasi (jika perlu)



Kontainer



5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

```
$ cd ~/traefik
```

```
$ docker-compose up -d
```

```
$ cd ~/moodle
```

```
$ docker-compose up -d
```



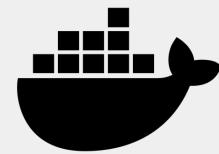


5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

The screenshot shows the Traefik dashboard at <https://web1.namasekolah.com/dashboard/#/>. The dashboard has a dark theme. At the top, it displays two entrypoints: WEB on port :80 and WEBSECURE on port :443. Below this, under the HTTP section, there are three main sections: Routers, Services, and Middlewares. Each section includes a circular progress chart and a table of success, warnings, and errors.

Category	Success	Warnings	Errors
Routers	100%	0%	0%
Services	100%	0%	0%
Middlewares	100%	0%	0%



Kontainer

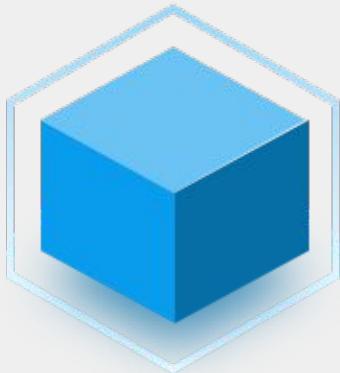


5. Jalankan Kontainer Traefik

6. Jalankan Kontainer Moodle

A screenshot of a web browser window. The address bar shows the URL <https://web2.namasekolah.com/>. The page title is "jagoanhosting". On the right side of the page, there is a message: "You are not logged in. ([Log in](#))". The main content area displays the Moodle login form, with the heading "Jagoan Hosting" visible above it.

Kontainer



1. Sediakan Server (VPS)



2. Pasang Mesin Kontainer (Docker)



3. Konfigurasi Load Balancer & SSL via Traefik



4. Konfigurasi *Image* Kontainer:

- a. Persistent Volume Moodle & moodledata
- b. Persistent Volume MariaDB

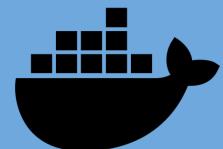
5. Jalankan Kontainer Traefik



6. Jalankan Kontainer Moodle



7. Optimasi (jika perlu)



Kontainer

Sumber Kode



github.com/andisugandi/jagoanhosting-pasang-moodle

Sumber Gambar

Moodle

: <https://www.klipartz.com/es/sticker-png-oxgjd>

Tux

: <https://www.omgubuntu.co.uk/2016/10/alternative-tux-logo>

Docker

: <https://iconape.com/docker-logo-icon-svg-png.html>

Web Server

: <https://yosinovitablec.wordpress.com/2017/06/17/persiapan-membangun-server-menggunakan-debian-8-6>

KVM

: <https://www.freelogovectors.net/kvm-logo/>

VirtualBox

: https://commons.wikimedia.org/wiki/File:Virtualbox_logo.png

Proxmox

: <https://en.wikipedia.org/wiki/File:Proxmox-VE-logo.svg>

VMWare

: <https://commons.wikimedia.org/wiki/File:Vmware.svg>

Hyper-V

: <https://www.pngdownload.id/png-x46imv/>

TETAP SEMANGAT !

