

# Konfigurasi Sister

## HAproxy dengan Algoritma Round Robin Serta Penerapan Cache

### File.pdf

Ihsan Pratama 177006094

Dewi Wulan Sari 177006021

1. Konfigurasi Haproxy
2. Konfigurasi mysql
3. Konfigurasi pada file Database.php untuk cachanya
4. Konfigurasi File Config.php untuk dynamic base url nya

### 1. Konfigurasi Haproxy

Setelah menginstall haproxy buka file konfigurasi haproxy di direktori

```
nano /etc/haproxy/haproxy.cfg
```

kemudian setting seperti dibawah ini

```
Global
  log /dev/log local0
  log /dev/log local1 notice
  chroot /var/lib/haproxy
  stats socket /run/haproxy/admin.sock mode 660 level admin expose-fd listeners
  stats timeout 30s
  user haproxy
  group haproxy
  daemon

  # Default SSL material locations
  ca-base /etc/ssl/certs
  crt-base /etc/ssl/private

  # Default ciphers to use on SSL-enabled listening sockets.
  # For more information, see ciphers(1SSL). This list is from:
  # https://hynek.me/articles/hardening-your-web-servers-ssl-ciphers/
  # An alternative list with additional directives can be obtained from
  # https://mozilla.github.io/server-side-tls/ssl-config-generator/?server=haproxy
```

```

ssl-default-bind-ciphers ECDH+AESGCM:DH+AESGCM:ECDH+AES256:DH+AES256:ECDH+
AES128:DH+AES:RSA+AESGCM:RSA+AES:!aNU$
ssl-default-bind-options no-sslv3

defaults
    log global
    mode http

    # Default ciphers to use on SSL-enabled listening sockets.
    # For more information, see ciphers(1SSL). This list is from:
    # https://hynek.me/articles/hardening-your-web-servers-ssl-ciphers/
    # An alternative list with additional directives can be obtained from
    # https://mozilla.github.io/server-side-tls/ssl-config-generator/?server=haproxy
    ssl-default-bind-ciphers
ECDH+AESGCM:DH+AESGCM:ECDH+AES256:DH+AES256:ECDH+AES128:DH+AES:RSA+AESGCM
:RSA+AES:!aNU$
    ssl-default-bind-options no-sslv3

defaults
    log global
    mode http
    option httplog
    option dontlognull
    timeout connect 5000
    timeout client 50000
    timeout server 50000
    errorfile 400 /etc/haproxy/errors/400.http
    errorfile 403 /etc/haproxy/errors/403.http
    errorfile 408 /etc/haproxy/errors/408.http
    errorfile 500 /etc/haproxy/errors/500.http
    errorfile 502 /etc/haproxy/errors/502.http
    errorfile 503 /etc/haproxy/errors/503.http
    errorfile 504 /etc/haproxy/errors/504.http

frontend Local_Server
    bind 192.168.43.223:80
    mode http
    default_backend My_Web_Servers

backend My_Web_Servers
    balance roundrobin
    mode http
    #option forwardfor
    #http-request set-header X-Forwarded-Port %[dst_port]
    #http-request add-header X-Forwarded-Proto https if { ssl_fc }
    #option httpchk HEAD / HTTP/1.1\r\nHost:localhost
    server web1.ihsan.com 192.168.43.223:8888 check
    server web2.dewi.com 192.168.43.146:8888 check

```

Untuk memverifikasi bahwa konfigurasinya valid / belum gunakan perintah dibawah ini

```
haproxy -c -f /etc/haproxy/haproxy.cfg
```

```
root@IhsanP:/home/ihsanp# nano /etc/haproxy/haproxy.cfg
root@IhsanP:/home/ihsanp# haproxy -c -f /etc/haproxy/haproxy.cfg
Configuration file is valid
```

## 2. Konfigurasi Mysql

Buka pada direktori

```
[sudo] password for ihsanp:
root@IhsanP:/home/ihsanp# nano /etc/mysql/mysql.conf.d/mysqld.cnf
```

Lalu untuk konfigurasinya seperti ini

```
#
# The MySQL database server configuration file.
#
# You can copy this to one of:
# - "/etc/mysql/my.cnf" to set global options,
# - "~/.my.cnf" to set user-specific options.
#
# One can use all long options that the program supports.
# Run program with --help to get a list of available options and with
# --print-defaults to see which it would actually understand and use.
#
# For explanations see
# http://dev.mysql.com/doc/mysql/en/server-system-variables.html

# This will be passed to all mysql clients
# It has been reported that passwords should be enclosed with ticks/quotes
# especially if they contain "#" chars...
# Remember to edit /etc/mysql/debian.cnf when changing the socket location.

# Here is entries for some specific programs
# The following values assume you have at least 32M ram

[mysqld_safe]
socket      = /var/run/mysqld/mysqld.sock
nice        = 0

[mysqld]
#
```

```

# * Basic Settings
#
user          = mysql
pid-file      = /var/run/mysqld/mysqld.pid
socket        = /var/run/mysqld/mysqld.sock
port          = 3306
basedir       = /usr
datadir       = /var/lib/mysql
tmpdir        = /tmp
lc-messages-dir = /usr/share/mysql
skip-external-locking

# The following values assume you have at least 32M ram

[mysqld_safe]
socket        = /var/run/mysqld/mysqld.sock
nice          = 0

[mysqld]
#
# * Basic Settings
#
user          = mysql
pid-file      = /var/run/mysqld/mysqld.pid
socket        = /var/run/mysqld/mysqld.sock
port          = 3306
basedir       = /usr
datadir       = /var/lib/mysql
tmpdir        = /tmp
lc-messages-dir = /usr/share/mysql
skip-external-locking
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address   = 192.168.43.223
bind-address   = 0.0.0.0
skip-name-resolve
#
# * Fine Tuning
#
key_buffer_size    = 16M
max_allowed_packet = 16M
thread_stack       = 192K
thread_cache_size  = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched

```

```

myisam-recover-options = BACKUP
#max_connections      = 100
#table_open_cache     = 64
#thread_concurrency   = 10
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address          = 192.168.43.223
bind-address          = 0.0.0.0
skip-name-resolve
#
# * Fine Tuning
#
key_buffer_size       = 16M
max_allowed_packet    = 16M
thread_stack          = 192K
thread_cache_size     = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
myisam-recover-options = BACKUP
#max_connections      = 100
#table_open_cache     = 64
#thread_concurrency   = 10
#
# * Query Cache Configuration
#
query_cache_limit      = 1M
query_cache_size       = 16M
#
# * Logging and Replication
#
# Both location gets rotated by the cronjob.
# Be aware that this log type is a performance killer.
# As of 5.1 you can enable the log at runtime!
#general_log_file      = /var/log/mysql/mysql.log
#general_log           = 1
#
# Error log - should be very few entries.
#
log_error = /var/log/mysql/error.log
#
# Here you can see queries with especially long duration
#slow_query_log         = 1
#slow_query_log_file    = /var/log/mysql/mysql-slow.log
#
query_cache_limit      = 1M

```

```

query_cache_size      = 16M
#
# * Logging and Replication
#
# Both location gets rotated by the cronjob.
# Be aware that this log type is a performance killer.
# As of 5.1 you can enable the log at runtime!
#general_log_file      = /var/log/mysql/mysql.log
#general_log           = 1
#
# Error log - should be very few entries.
#
log_error = /var/log/mysql/error.log
#
# Here you can see queries with especially long duration
#slow_query_log         = 1
#slow_query_log_file    = /var/log/mysql/mysql-slow.log
#long_query_time = 2
#log-queries-not-using-indexes
#
# The following can be used as easy to replay backup logs or for replication.
# note: if you are setting up a replication slave, see README.Debian about
#      other settings you may need to change.
server-id              = 1
log_bin                = /var/log/mysql/mysql-bin.log
expire_logs_days       = 10
max_binlog_size        = 100M
binlog_do_db           = db_perpustakaan
#binlog_ignore_db       = include_database_name
#
# * InnoDB
#
# InnoDB is enabled by default with a 10MB datafile in /var/lib/mysql/.
# Read the manual for more InnoDB related options. There are many!
#
# * Security Features
#
#log-queries-not-using-indexes
#
# The following can be used as easy to replay backup logs or for replication.
# note: if you are setting up a replication slave, see README.Debian about
#      other settings you may need to change.
server-id              = 1
log_bin                = /var/log/mysql/mysql-bin.log
expire_logs_days       = 10
max_binlog_size        = 100M

```

```

binlog_do_db      = db_perpustakaan
#binlog_ignore_db = include_database_name
#
# * InnoDB
#
# InnoDB is enabled by default with a 10MB datafile in /var/lib/mysql/.
# Read the manual for more InnoDB related options. There are many!
#
# * Security Features
#
# Read the manual, too, if you want chroot!
# chroot = /var/lib/mysql/
#
# For generating SSL certificates I recommend the OpenSSL GUI "tinyca".
#
# ssl-ca=/etc/mysql/cacert.pem
# ssl-cert=/etc/mysql/server-cert.pem
# ssl-key=/etc/mysql/server-key.pem

```

### 3. Konfigurasi Pada Database.php untuk Cache File

Database.php

```

<?php
defined('BASEPATH') OR exit('No direct script access allowed');

$active_group = 'default';
$query_builder = TRUE;

$db['default'] = array(
    'dsn' => '',
    'hostname' => '192.168.27.1',
    'username' => 'ihсан',
    'password' => 'ihsanp1',
    'database' => 'db_perpustakaan',
    'dbdriver' => 'mysqli',
    'dbprefix' => '',
    'pconnect' => FALSE,
    'db_debug' => (ENVIRONMENT !== 'production'),
    'cache_on' => TRUE,
    'cachedir' => 'application/cache',
    'char_set' => 'utf8',
    'dbcollat' => 'utf8_general_ci',
    'swap_pre' => '',
    'encrypt' => FALSE,

```

```

        'compress' => FALSE,
        'stricton' => FALSE,
        'failover' => array(),
        'save_queries' => TRUE
    );

```

#### 4. Untuk konfigurasi dynamic base url nya pada

Config.php

```

<?php
defined('BASEPATH') or exit('No direct script access allowed');

/*
|-----|
| Base Site URL
|-----|
|
| URL to your CodeIgniter root. Typically this will be your base URL,
| WITH a trailing slash:
|
|   http://example.com/
|
| WARNING: You MUST set this value!
|
| If it is not set, then CodeIgniter will try guess the protocol and path
| your installation, but due to security concerns the hostname will be set
| to $_SERVER['SERVER_ADDR'] if available, or localhost otherwise.
| The auto-detection mechanism exists only for convenience during
| development and MUST NOT be used in production!
|
| If you need to allow multiple domains, remember that this file is still
| a PHP script and you can easily do that on your own.
|
*/
$root = "http://" . $_SERVER['HTTP_HOST'];
$root .= str_replace(basename($_SERVER['SCRIPT_NAME']), "", $_SERVER['SCRIPT
_NAME']);

$config['base_url']    = "$root";

/*
|-----|

```



```

| Index File
|-----
|
| Typically this will be your index.php file, unless you've renamed it to
| something else. If you are using mod_rewrite to remove the page set this
| variable so that it is blank.
|
| */
$config['index_page'] = 'index.php';

/*
|-----
| URI PROTOCOL
|-----
|
| This item determines which server global should be used to retrieve the
| URI string. The default setting of 'REQUEST_URI' works for most servers.
| If your links do not seem to work, try one of the other delicious flavors:
|
| 'REQUEST_URI'    Uses $_SERVER['REQUEST_URI']
| 'QUERY_STRING'   Uses $_SERVER['QUERY_STRING']
| 'PATH_INFO'      Uses $_SERVER['PATH_INFO']
|
| WARNING: If you set this to 'PATH_INFO', URIs will always be URL-decoded!
| */
$config['uri_protocol'] = 'REQUEST_URI';

/*
|-----
| URL suffix
|-----
|
| This option allows you to add a suffix to all URLs generated by CodeIgnite
| r.
| For more information please see the user guide:
|
| https://codeigniter.com/user_guide/general/urls.html
| */
$config['url_suffix'] = '';

/*
|-----
| Default Language
|-----
|

```

```
| This determines which set of language files should be used. Make sure
| there is an available translation if you intend to use something other
| than english.
|
*/
$config['language']    = 'english';

/*
|-----|
| Default Character Set
|-----|
|
| This determines which character set is used by default in various methods
| that require a character set to be provided.
|
| See http://php.net/htmlspecialchars for a list of supported charsets.
|
*/
$config['charset'] = 'UTF-8';

/*
|-----|
| Enable/Disable System Hooks
|-----|
|
| If you would like to use the 'hooks' feature you must enable it by
| setting this variable to TRUE (boolean).  See the user guide for details.
|
*/
$config['enable_hooks'] = FALSE;

/*
|-----|
| Class Extension Prefix
|-----|
|
| This item allows you to set the filename/classname prefix when extending
| native libraries.  For more information please see the user guide:
|
| https://codeigniter.com/user_guide/general/core_classes.html
| https://codeigniter.com/user_guide/general/creating_libraries.html
|
*/
$config['subclass_prefix'] = 'MY_';
```

```

/*
|-----
| Composer auto-loading
|-----
|
| Enabling this setting will tell CodeIgniter to look for a Composer
| package auto-loader script in application/vendor/autoload.php.
|
|   $config['composer_autoload'] = TRUE;
|
| Or if you have your vendor/ directory located somewhere else, you
| can opt to set a specific path as well:
|
|   $config['composer_autoload'] = '/path/to/vendor/autoload.php';
|
| For more information about Composer, please visit http://getcomposer.org/
|
| Note: This will NOT disable or override the CodeIgniter-specific
| autoloading (application/config/autoload.php)
*/
$config['composer_autoload'] = FALSE;

/*
|-----
| Allowed URL Characters
|-----
|
| This lets you specify which characters are permitted within your URLs.
| When someone tries to submit a URL with disallowed characters they will
| get a warning message.
|
| As a security measure you are STRONGLY encouraged to restrict URLs to
| as few characters as possible. By default only these are allowed: a-z 0-
9~%.:_-
|
| Leave blank to allow all characters -- but only if you are insane.
|
| The configured value is actually a regular expression character group
| and it will be executed as: ! preg_match('/^[<permitted_uri_chars>]+$/i
|
| DO NOT CHANGE THIS UNLESS YOU FULLY UNDERSTAND THE REPERCUSSIONS!!
|
*/
$config['permitted_uri_chars'] = 'a-z 0-9~%.:_-';

```

```

/*
|-----
| Enable Query Strings
|-----
|
| By default CodeIgniter uses search-engine friendly segment based URLs:
| example.com/who/what/where/
|
| You can optionally enable standard query string based URLs:
| example.com?who=me&what=something&where=here
|
| Options are: TRUE or FALSE (boolean)
|
| The other items let you set the query string 'words' that will
| invoke your controllers and its functions:
| example.com/index.php?c=controller&m=function
|
| Please note that some of the helpers won't work as expected when
| this feature is enabled, since CodeIgniter is designed primarily to
| use segment based URLs.
|
*/
$config['enable_query_strings'] = FALSE;
$config['controller_trigger'] = 'c';
$config['function_trigger'] = 'm';
$config['directory_trigger'] = 'd';

/*
|-----
| Allow $_GET array
|-----
|
| By default CodeIgniter enables access to the $_GET array. If for some
| reason you would like to disable it, set 'allow_get_array' to FALSE.
|
| WARNING: This feature is DEPRECATED and currently available only
|          for backwards compatibility purposes!
|
*/
$config['allow_get_array'] = TRUE;

/*
|-----
| Error Logging Threshold
|-----

```

```

/
/ You can enable error logging by setting a threshold over zero. The
/ threshold determines what gets logged. Threshold options are:
/
/ 0 = Disables Logging, Error Logging TURNED OFF
/ 1 = Error Messages (including PHP errors)
/ 2 = Debug Messages
/ 3 = Informational Messages
/ 4 = All Messages
/
/ You can also pass an array with threshold levels to show individual error
types
/
/ array(2) = Debug Messages, without Error Messages
/
/ For a live site you'll usually only enable Errors (1) to be logged otherwi
se
/ your log files will fill up very fast.
/
*/
$config['log_threshold'] = 0;

/*
/-----
/ Error Logging Directory Path
/-----
/
/ Leave this BLANK unless you would like to set something other than the def
ault
/ application/logs/ directory. Use a full server path with trailing slash.
/
*/
$config['log_path'] = '';

/*
/-----
/ Log File Extension
/-----
/
/ The default filename extension for log files. The default 'php' allows for
/ protecting the log files via basic scripting, when they are to be stored
/ under a publicly accessible directory.
/
/ Note: Leaving it blank will default to 'php'.
/

```

```

*/
$config['log_file_extension'] = '';

/*
|-----
| Log File Permissions
|-----
|
| The file system permissions to be applied on newly created log files.
|
| IMPORTANT: This MUST be an integer (no quotes) and you MUST use octal
|             integer notation (i.e. 0700, 0644, etc.)
*/
$config['log_file_permissions'] = 0644;

/*
|-----
| Date Format for Logs
|-----
|
| Each item that is logged has an associated date. You can use PHP date
| codes to set your own date formatting
|
*/
$config['log_date_format'] = 'Y-m-d H:i:s';

/*
|-----
| Error Views Directory Path
|-----
|
| Leave this BLANK unless you would like to set something other than the def
| ault
| application/views/errors/ directory. Use a full server path with trailing
| slash.
|
*/
$config['error_views_path'] = '';

/*
|-----
| Cache Directory Path
|-----
|

```

```

| Leave this BLANK unless you would like to set something other than the default
| application/cache/ directory. Use a full server path with trailing slash.
|
|*/
$config['cache_path'] = '';

/*
|-----
| Cache Include Query String
|-----
|
| Whether to take the URL query string into consideration when generating
| output cache files. Valid options are:
|
| FALSE      = Disabled
| TRUE       = Enabled, take all query parameters into account.
|               Please be aware that this may result in numerous cache
|               files generated for the same page over and over again.
| array('q') = Enabled, but only take into account the specified list
|               of query parameters.
|
|*/
$config['cache_query_string'] = FALSE;

/*
|-----
| Encryption Key
|-----
|
| If you use the Encryption class, you must set an encryption key.
| See the user guide for more info.
|
| https://codeigniter.com/user\_guide/libraries/encryption.html
|
|*/
$config['encryption_key'] = '';

/*
|-----
| Session Variables
|-----
|
| 'sess_driver'
|

```

```
| The storage driver to use: files, database, redis, memcached
|
| 'sess_cookie_name'
|
| The session cookie name, must contain only [0-9a-z_-] characters
|
| 'sess_expiration'
|
| The number of SECONDS you want the session to last.
| Setting to 0 (zero) means expire when the browser is closed.
|
| 'sess_save_path'
|
| The location to save sessions to, driver dependent.
|
| For the 'files' driver, it's a path to a writable directory.
| WARNING: Only absolute paths are supported!
|
| For the 'database' driver, it's a table name.
| Please read up the manual for the format with other session drivers.
|
| IMPORTANT: You are REQUIRED to set a valid save path!
|
| 'sess_match_ip'
|
| Whether to match the user's IP address when reading the session data.
|
| WARNING: If you're using the database driver, don't forget to update
| your session table's PRIMARY KEY when changing this setting.
|
| 'sess_time_to_update'
|
| How many seconds between CI regenerating the session ID.
|
| 'sess_regenerate_destroy'
|
| Whether to destroy session data associated with the old session ID
| when auto-regenerating the session ID. When set to FALSE, the data
| will be later deleted by the garbage collector.
|
| Other session cookie settings are shared with the rest of the application,
| except for 'cookie_prefix' and 'cookie_httponly', which are ignored here.
|
| */
$config['sess_driver'] = 'files';
```



```

$config['sess_cookie_name'] = 'ci_session';
$config['sess_expiration'] = 7200;
$config['sess_save_path'] = NULL;
$config['sess_match_ip'] = FALSE;
$config['sess_time_to_update'] = 300;
$config['sess_regenerate_destroy'] = FALSE;

/*
|-----|
| Cookie Related Variables
|-----|
|
| 'cookie_prefix'    = Set a cookie name prefix if you need to avoid collisions
| 'cookie_domain'    = Set to .your-domain.com for site-wide cookies
| 'cookie_path'      = Typically will be a forward slash
| 'cookie_secure'    = Cookie will only be set if a secure HTTPS connection exists.
| 'cookie_httponly'  = Cookie will only be accessible via HTTP(S) (no javascript)
|
| Note: These settings (with the exception of 'cookie_prefix' and
|       'cookie_httponly') will also affect sessions.
|
*/
$config['cookie_prefix']    = '';
$config['cookie_domain']    = '';
$config['cookie_path']      = '/';
$config['cookie_secure']    = FALSE;
$config['cookie_httponly']  = FALSE;

/*
|-----|
| Standardize newlines
|-----|
|
| Determines whether to standardize newline characters in input data,
| meaning to replace \r\n, \r, \n occurrences with the PHP_EOL value.
|
| WARNING: This feature is DEPRECATED and currently available only
|          for backwards compatibility purposes!
|
*/
$config['standardize_newlines'] = FALSE;

```

```

/*
|-----
| Global XSS Filtering
|-----
|
| Determines whether the XSS filter is always active when GET, POST or
| COOKIE data is encountered
|
| WARNING: This feature is DEPRECATED and currently available only
|         for backwards compatibility purposes!
|
*/
$config['global_xss_filtering'] = FALSE;

/*
|-----
| Cross Site Request Forgery
|-----
| Enables a CSRF cookie token to be set. When set to TRUE, token will be
| checked on a submitted form. If you are accepting user data, it is strongly
| recommended CSRF protection be enabled.
|
| 'csrf_token_name' = The token name
| 'csrf_cookie_name' = The cookie name
| 'csrf_expire' = The number in seconds the token should expire.
| 'csrf_regenerate' = Regenerate token on every submission
| 'csrf_exclude_uris' = Array of URIs which ignore CSRF checks
*/
$config['csrf_protection'] = FALSE;
$config['csrf_token_name'] = 'csrf_test_name';
$config['csrf_cookie_name'] = 'csrf_cookie_name';
$config['csrf_expire'] = 7200;
$config['csrf_regenerate'] = TRUE;
$config['csrf_exclude_uris'] = array();

/*
|-----
| Output Compression
|-----
|
| Enables Gzip output compression for faster page loads. When enabled,
| the output class will test whether your server supports Gzip.
| Even if it does, however, not all browsers support compression
| so enable only if you are reasonably sure your visitors can handle it.

```

```

/
/ Only used if zlib.output_compression is turned off in your php.ini.
/ Please do not use it together with httpd-level output compression.
/
/ VERY IMPORTANT: If you are getting a blank page when compression is enabled it
/ means you are prematurely outputting something to your browser. It could
/ even be a line of whitespace at the end of one of your scripts. For
/ compression to work, nothing can be sent before the output buffer is called
/ by the output class. Do not 'echo' any values with compression enabled.
/
*/
$config['compress_output'] = FALSE;

/*
|-----
| Master Time Reference
|-----
|
| Options are 'local' or any PHP supported timezone. This preference tells
| the system whether to use your server's local time as the master 'now'
| reference, or convert it to the configured one timezone. See the 'date
| helper' page of the user guide for information regarding date handling.
|
*/
$config['time_reference'] = 'local';

/*
|-----
| Rewrite PHP Short Tags
|-----
|
| If your PHP installation does not have short tag support enabled CI
| can rewrite the tags on-the-fly, enabling you to utilize that syntax
| in your view files. Options are TRUE or FALSE (boolean)
|
| Note: You need to have eval() enabled for this to work.
|
*/
$config['rewrite_short_tags'] = FALSE;

/*
|-----
| Reverse Proxy IPs

```

```
|-----  
|  
| If your server is behind a reverse proxy, you must whitelist the proxy  
| IP addresses from which CodeIgniter should trust headers such as  
| HTTP_X_FORWARDED_FOR and HTTP_CLIENT_IP in order to properly identify  
| the visitor's IP address.  
|  
| You can use both an array or a comma-separated list of proxy addresses,  
| as well as specifying whole subnets. Here are a few examples:  
|  
| Comma-separated: '10.0.1.200,192.168.5.0/24'  
| Array:           array('10.0.1.200', '192.168.5.0/24')  
*/  
$config['proxy_ips'] = '';
```