

# Graduation Day 28 March 2023

IT Cluster Academy, DevOps Course  
Ivano-Frankivsk, UA



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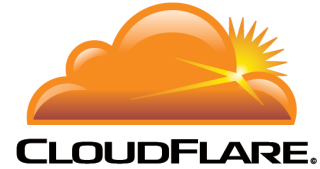
[github.com/fcss88](https://github.com/fcss88)

SysAdmin | SRE | DevOps

Since July 2017

MVK IF, UA @fcss88

# Tools



HAProxy



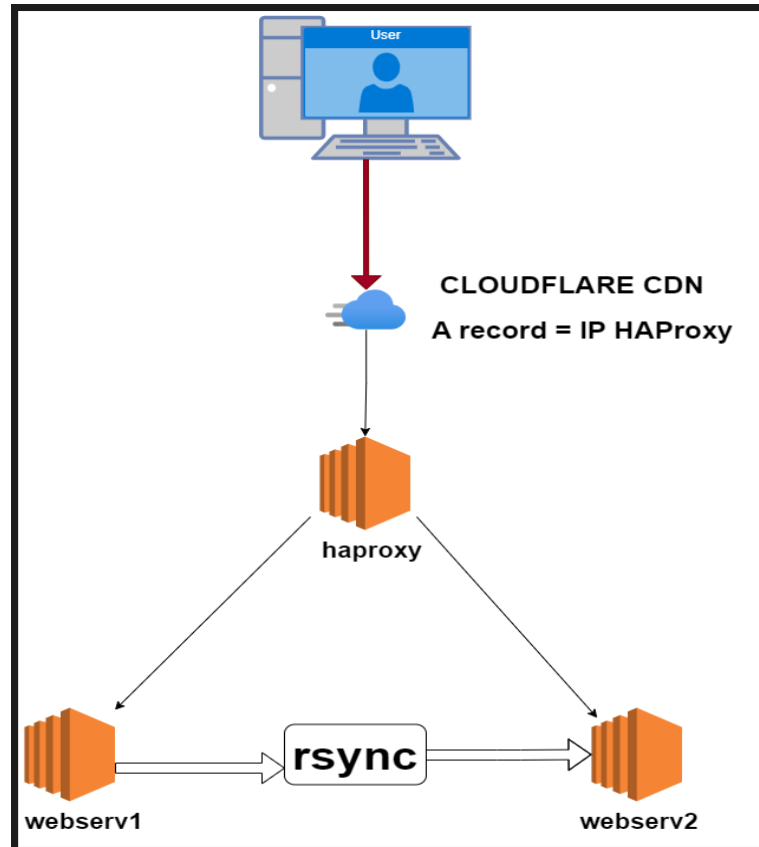
HashiCorp  
**Terraform**



ANSIBLE



# Infrastructure



# Terraform

```
terraform {
  required_providers {
    cloudflare = {
      source = "cloudflare/cloudflare"
      version = "4.2.0"
    }
  }
}

provider "cloudflare" {
  email = var.cloudflare_email
  api_key = var.cloudflare_api_key
}

resource "cloudflare_zone" "example" {
  account_id = var.cloudflare_account_id
  zone = "itca.pp.ua"
  type = "full"
  jump_start = true
}

resource "cloudflare_record" "example_a" {
  zone_id = cloudflare_zone.example.id
  name = "@"
  value = "19.18.55.1"
  type = "A"
  ttl = 1
  proxied = true
}
```

```
terraform {
  required_providers {
    linode = {
      source = "linode/linode"
      version = "1.30.0"
    }
  }
}

# Linode provider API-key
provider "linode" {
  token = var.token_linode
}

# CREATING host with apache
resource "linode_instance" "webserv-apache" {
  label = "apache"
  region = "eu-central"
  type = "g6-standard-1"
  image = "linode/debian11"
  root_pass = var.root_password_linode
  authorized_keys = [ "ssh-rsa AAAAB3NzaC1r rsa-key-20210708" ]
  backups_enabled = false
  private_ip = false

  provisioner "remote-exec" {
    connection {
      type = "ssh"
      user = "root"
      password = var.root_password_linode
      host = "${linode_instance.webserv-apache.ip_address}"
    }
    inline = [
      "apt update && apt full-upgrade -y && apt install apache2 -y && systemctl enable apache2",
    ]
  }
}

output "ip_address" {
  value = linode_instance.webserv-apache.ip_address
}
```

# Ansible

```
- name: Install mc on web servers
hosts: webservers
become: true
tasks:
  - name: Install MC
    apt:
      name: mc
      state: present
```

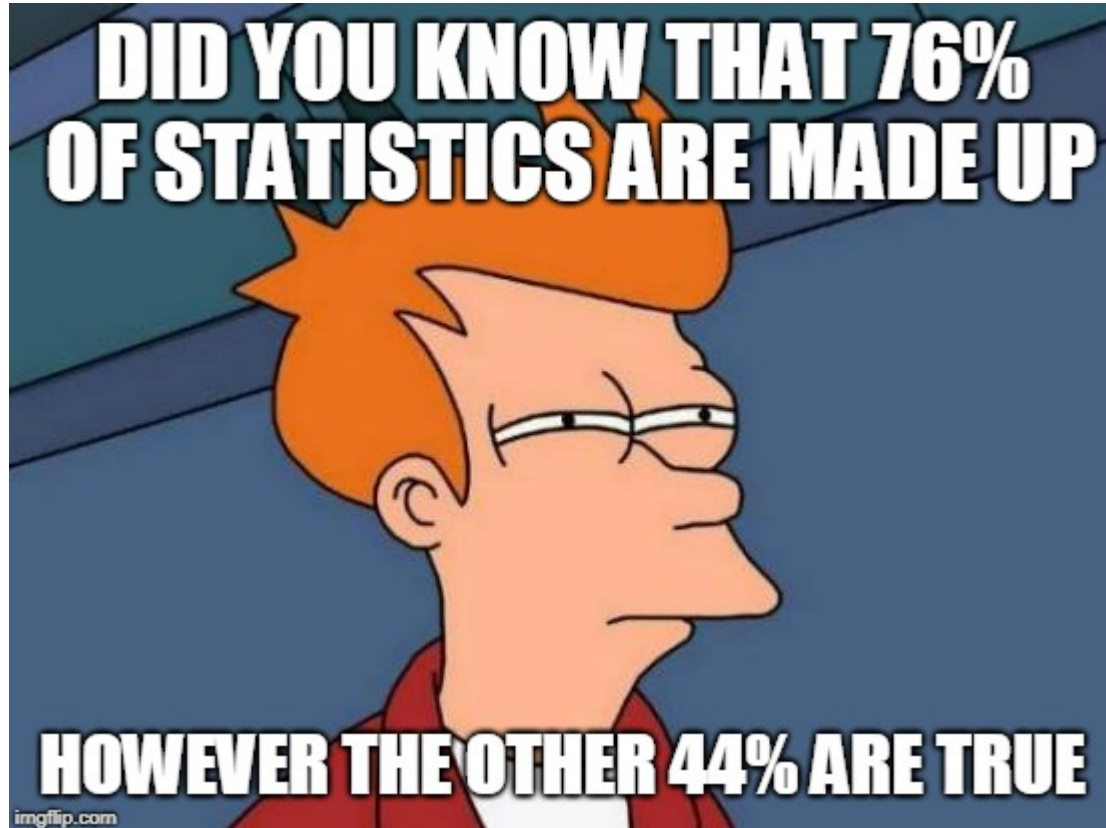
Ansible-  
playbook  
examples

```
- name: Change web server1 haproxy
hosts: haproxy
become: true
tasks:
  - name: ChangedWebServ1
    replace:
      path: /etc/haproxy/haproxy.cfg
      regexp: 'server webserv1 .*'
      replace: 'server webserv1 NEW_SERVER_IP_ADDRESS:80'
  - name: Restart haproxy
    systemd:
      name: haproxy
      state: restarted
```

# HAProxy

```
frontend webfront
    bind *:80
    bind *:443
    default_backend webback
backend webback
    balance roundrobin
    # optional leastconn balancing
    server webserv1 143.42.56.235:80
    server webserv2 143.42.26.53:80
```

# Statistic?



# Statistic is here:

HAProxy version 2.2.9-2+deb11u4, released 2023/02/11

## Statistics Report for pid 4223

### > General process information

pid = 4223 (process #1, nbproc = 1, nbthread = 1)  
uptime = 0d 4h50m03s  
system limits: memmax = unlimited; ulimit-n = 524287  
maxsock = 524287; maxconn = 262124; maxpipes = 0  
current conns = 2; current pipes = 0/0; conn rate = 0/sec; bit rate = 0.000 kbps  
Running tasks: 1/11; idle = 100 %

active UP  
active UP, going down  
active DOWN, going up  
active or backup DOWN  
active or backup DOWN for maintenance (MAINT)  
active or backup SOFT STOPPED for maintenance  
backup UP  
backup UP, going down  
backup DOWN, going up  
not checked

Note: "NOLB"/"DRAIN" = UP with load-balancing disabled.

Display option:

- Scope :
- [Hide 'DOWN' servers](#)
- [Disable refresh](#)
- [Refresh now](#)
- [CSV export](#)
- [JSON export \(schema\)](#)

External resources:

- [Primary site](#)
- [Updates \(v2.2\)](#)
- [Online manual](#)

stats																															
	Queue			Session rate			Sessions						Bytes		Denied		Errors			Warnings		Server									
	Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle	
Frontend				0	3	-	2	3	262 124	41			134 162	7 340 474	0	0	13					OPEN									
Backend	0	0		0	3		0	1	26 213	19	0	0s	134 162	7 340 474	0	0		19	0	0	0	4h50m UP		0	0	0		0			

webfront																																
		Queue			Session rate			Sessions					Bytes		Denied		Errors			Warnings		Server										
		Cur	Max	Limit	Cur	Max	Limit	Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle	
	Frontend				0	3	-	0	16	262 124	70		84 723	218 713	0	0	4						OPEN									

webback																														
		Queue				Session rate			Sessions					Bytes		Denied		Errors			Warnings		Server							
		Cur	Max	Limit		Cur	Max	Limit	Total	LbTot	Last	In	Out	Req	Resp	Req	Conn	Resp	Retr	Redis	Status	LastChk	Wght	Act	Bck	Chk	Dwn	Dwntme	Thrtle	
<input type="checkbox"/>	webserv1	0	0	-	0	4		0	1	-	79	79	21m40s	41 846	180 031		0		0	0	0	no check		1	Y	-			-	
<input type="checkbox"/>	webserv2	0	0	-	0	4		0	1	-	78	78	33m45s	42 877	37 898		0		0	0	0	no check		1	Y	-			-	
	Backend	0	0		0	8		0	1	26 213	157	157	21m40s	84 723	217 929	0	0		0	0	0	4h50m UP		2	2	0		0	0s	

Choose the action to perform on the checked servers :  Apply



# You really don't have SSL?



9

# HTTPS is HERE

```
C:\>curl -i -k -A "google" http://itca.pp.ua
HTTP/1.1 301 Moved Permanently
Date: Sun, 26 Mar 2023 23:55:51 GMT
Transfer-Encoding: chunked
Connection: keep-alive
Cache-Control: max-age=3600
Expires: Mon, 27 Mar 2023 00:55:51 GMT
Location: https://itca.pp.ua/
Report-To: {"endpoints":[{"url":"https://a.nel.cloudflare.com/repo%2BB99Sjie8ViLxdZWnAh3Djr7J7FEt2sZyC%2FpztHVLKZKq1iswCJ96w2"}],"group": "cf-nel"}, {"success_fraction": 0, "report_to": "cf-nel", "max_age": 604800}
Server: cloudflare
CF-RAY: 7ae353b09e2077af-KBP
alt-svc: h3=":443"; ma=86400, h3-29=":443"; ma=86400
```

```
C:\>curl -i -k -A "google" http://www.itca.pp.ua
HTTP/1.1 301 Moved Permanently
Date: Sun, 26 Mar 2023 23:55:57 GMT
Transfer-Encoding: chunked
Connection: keep-alive
Cache-Control: max-age=3600
Expires: Mon, 27 Mar 2023 00:55:57 GMT
Location: https://www.itca.pp.ua/
Report-To: {"endpoints":[{"url":"https://a.nel.cloudflare.com/repoivLAav9tzHqpnIwoN%2F%2BQ06i950p6GIK%2BtCSueBpwWiGipPyCsobbsaRRhz7A%3D"}],"group": "cf-nel"}, {"success_fraction": 0, "report_to": "cf-nel", "max_age": 604800}
Server: cloudflare
CF-RAY: 7ae353d65c192d37-KBP
alt-svc: h3=":443"; ma=86400, h3-29=":443"; ma=86400
```



Common name: \*.itca.pp.ua  
SANs: \*.itca.pp.ua, itca.pp.ua  
Valid from March 25, 2023 to June 23, 2023  
Serial Number: 72b029e961979f990e7ec5ced92c2895  
Signature Algorithm: sha256WithRSAEncryption  
Issuer: GTS CA 1P5



Common name: GTS CA 1P5  
Organization: Google Trust Services LLC  
Location: US  
Valid from August 12, 2020 to September 29, 2027  
Serial Number: 0203bc50a32753f0918022edf1  
Signature Algorithm: sha256WithRSAEncryption  
Issuer: GTS Root R1



Common name: GTS Root R1  
Organization: Google Trust Services LLC  
Location: US  
Valid from June 18, 2020 to January 27, 2028  
Serial Number: 77bd0d6cdb36f91aea210fc4f058d30d  
Signature Algorithm: sha256WithRSAEncryption  
Issuer: GlobalSign Root CA

# SSL benefits



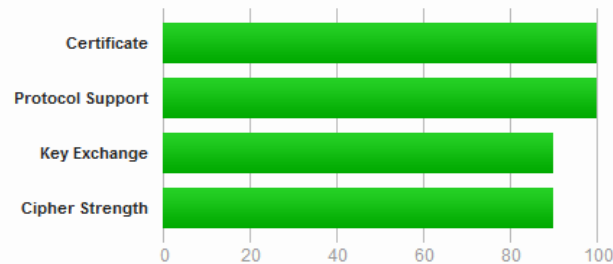
[Home](#) [Projects](#) [Qualys Free Trial](#) [Contact](#)

You are here: [Home](#) > [Projects](#) > [SSL Server Test](#) > [itca.pp.ua](#) > 172.67.197.57

**SSL Report:** [itca.pp.ua](#) (172.67.197.57)

## Summary

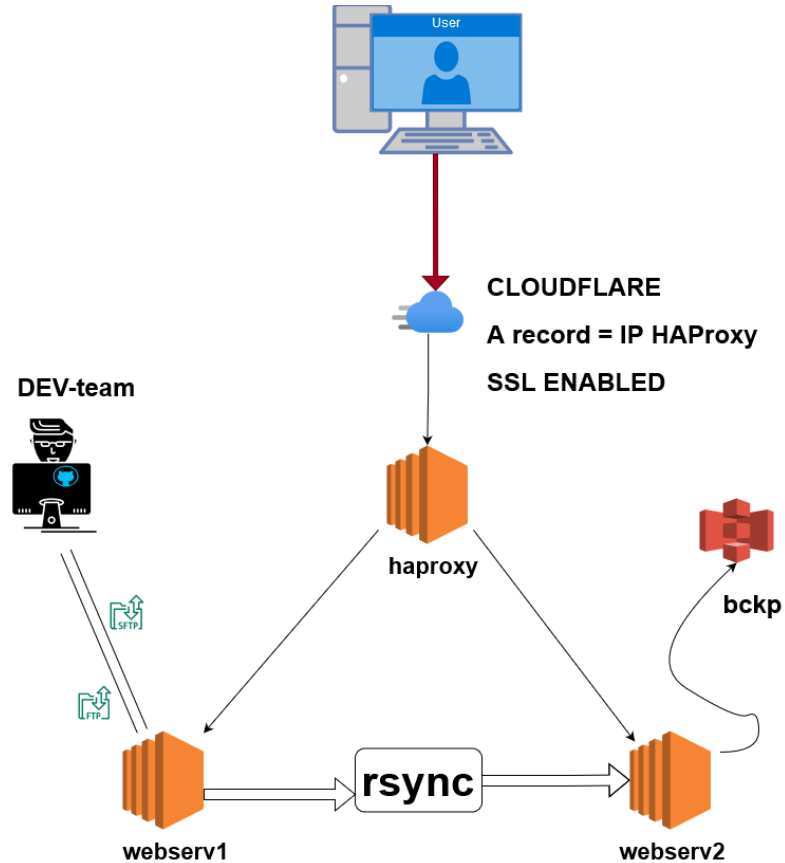
Overall Rating



Visit our [documentation page](#) for more information, configuration guides, and books. Known issues are documented [here](#).

This server supports TLS 1.3.

# Future



# Links

<http://www.haproxy.org/>

<https://www.ssllabs.com/ssltest/analyze.html?d=itca.pp.ua>

<https://www.linode.com/free-bundled-services/>

[http://admin:pass123@139.144.73.169:8080/haproxy\\_stats](http://admin:pass123@139.144.73.169:8080/haproxy_stats)

To be continued ...

Directed by  
ROBERT B. WEIDE