

Опыт кластеризации Zabbix

Михаил Макуров

62k
HOSTS

4,7M
ITEMS

Number of hosts (enabled/disabled/templates)	62467	2400 / 1 / 66
Number of items (enabled/disabled/not supported)	4714931	4713009 / 147 / 1775
Number of triggers (enabled/disabled [problem/ok])	662448	322166 / 340282 [432 / 321734]
Number of users (online)	149	13
Required server performance, new values per second	20879.91	

21K NVPS

300K
TRIGGERS

zbxsl-chel2.is74.ru: CPU idle time (avg5)



5



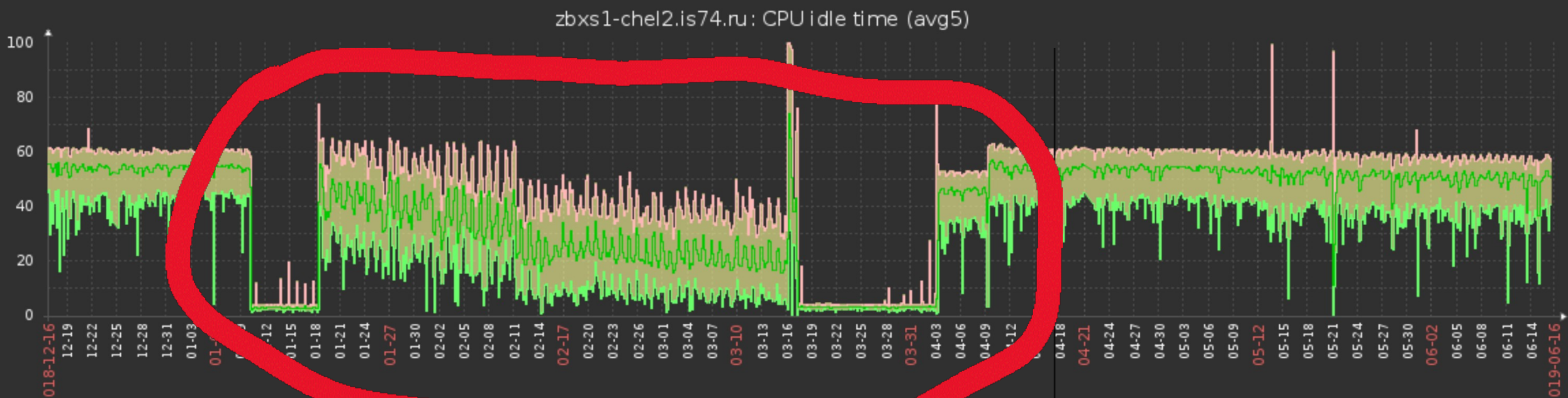
Server + DB + Web



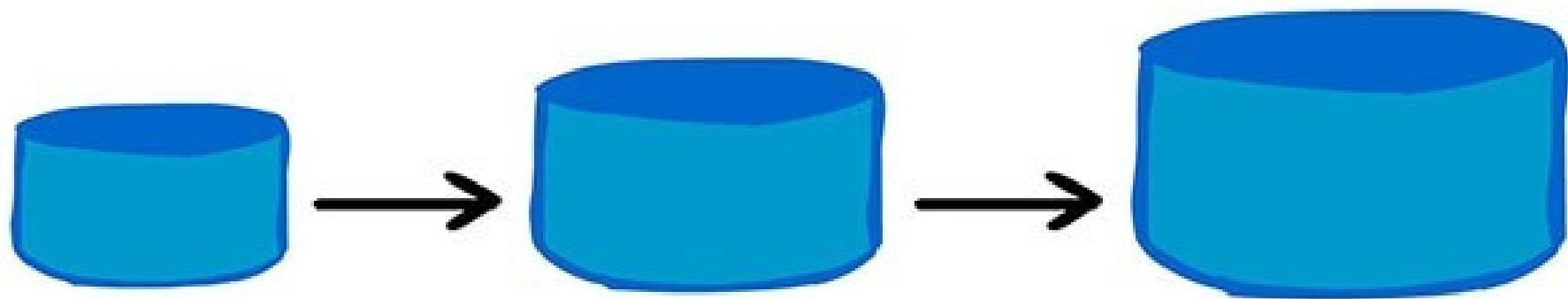
Server + DB + Web

Можно спать
спокойно?

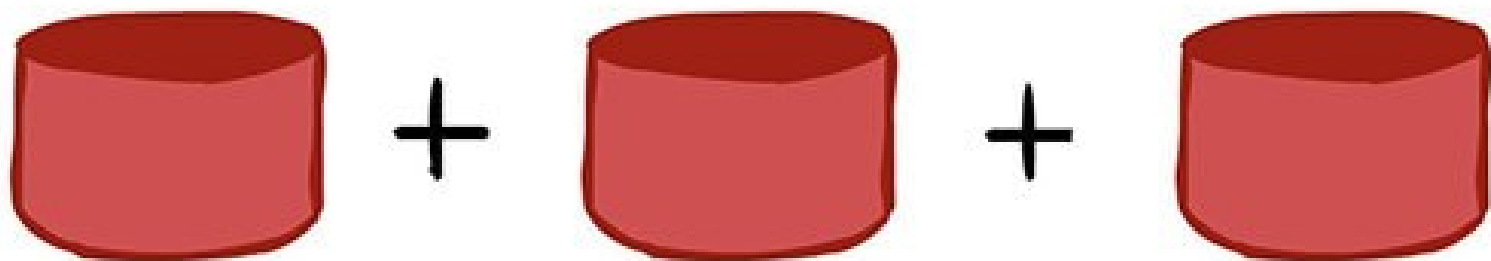
Не совсем



Scale-up



Scale-out



Кластер

- Атомарная единица – хост

Кластер

- Атомарная единица – хост
- Задача распределить хосты

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- Задача распределить хосты
- Координация – “типа OSPF”

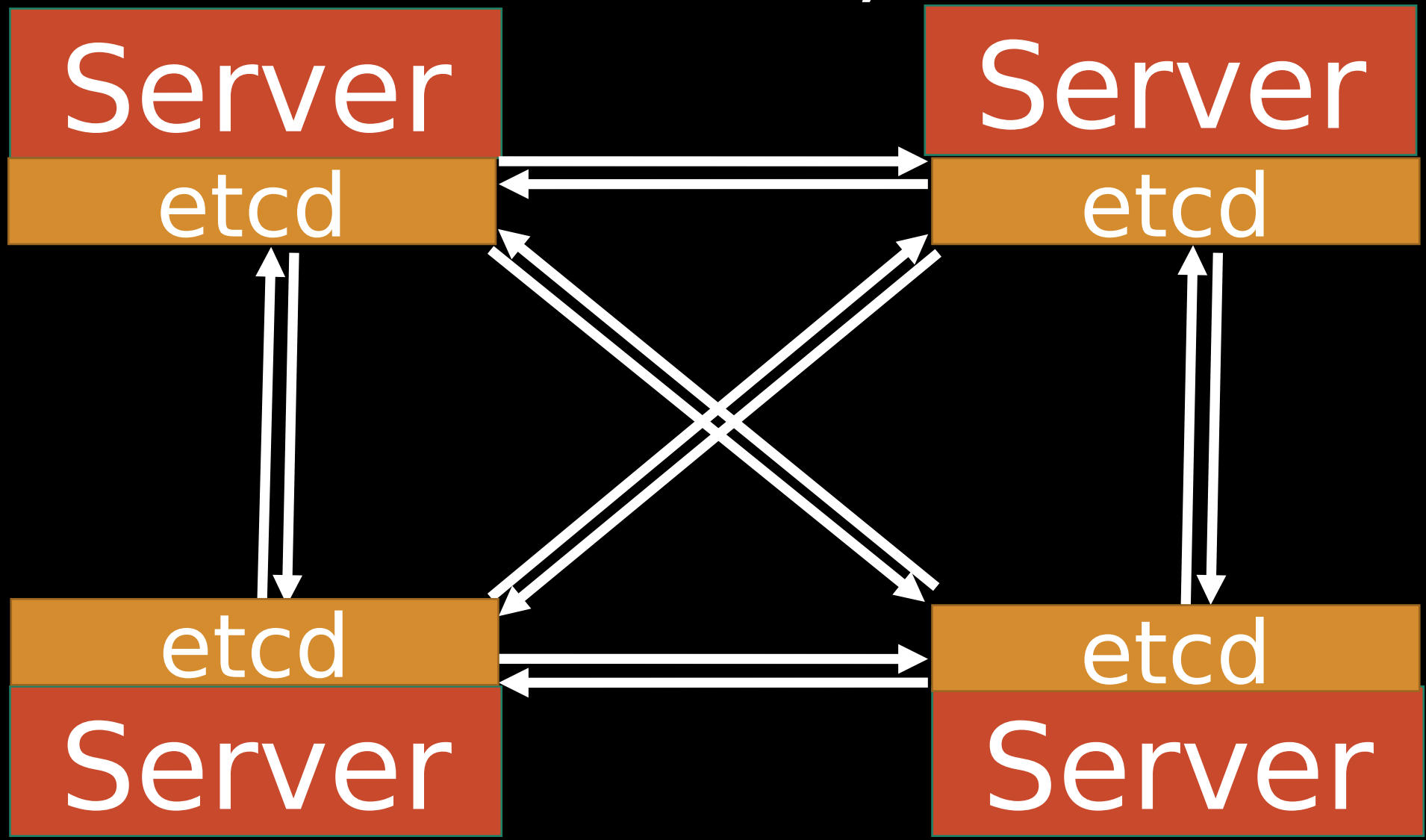
Кластер

- Атомарная единица – хост
- Задача распределить хосты
- Координация – “типа OSPF”
- Превзойти 60-70к

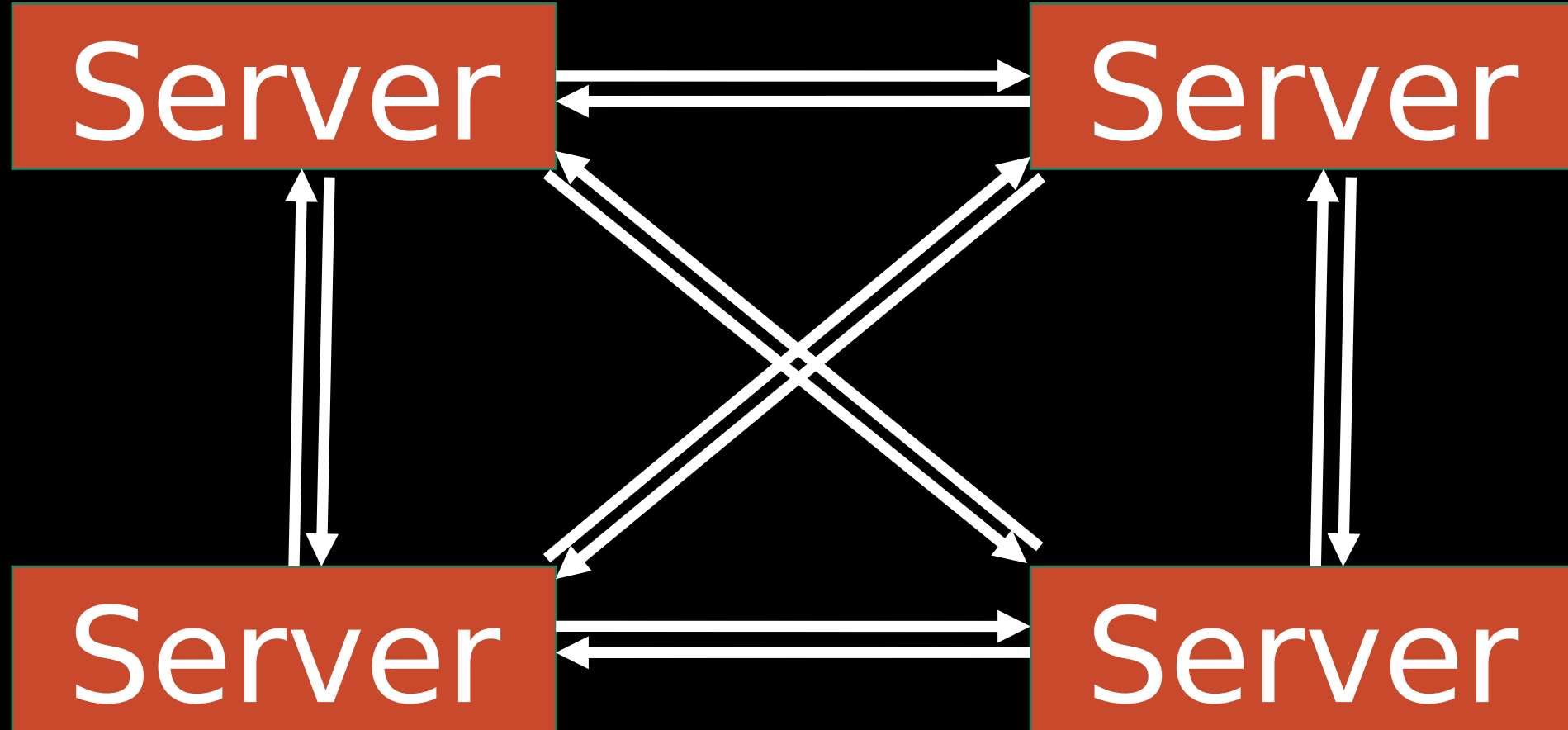
Кластер

- Атомарная единица – хост
- Задача распределить хосты
- Координация – “типа OSPF”
- Превзойти 60-70к
- Надежность (Redundancy) и Простота

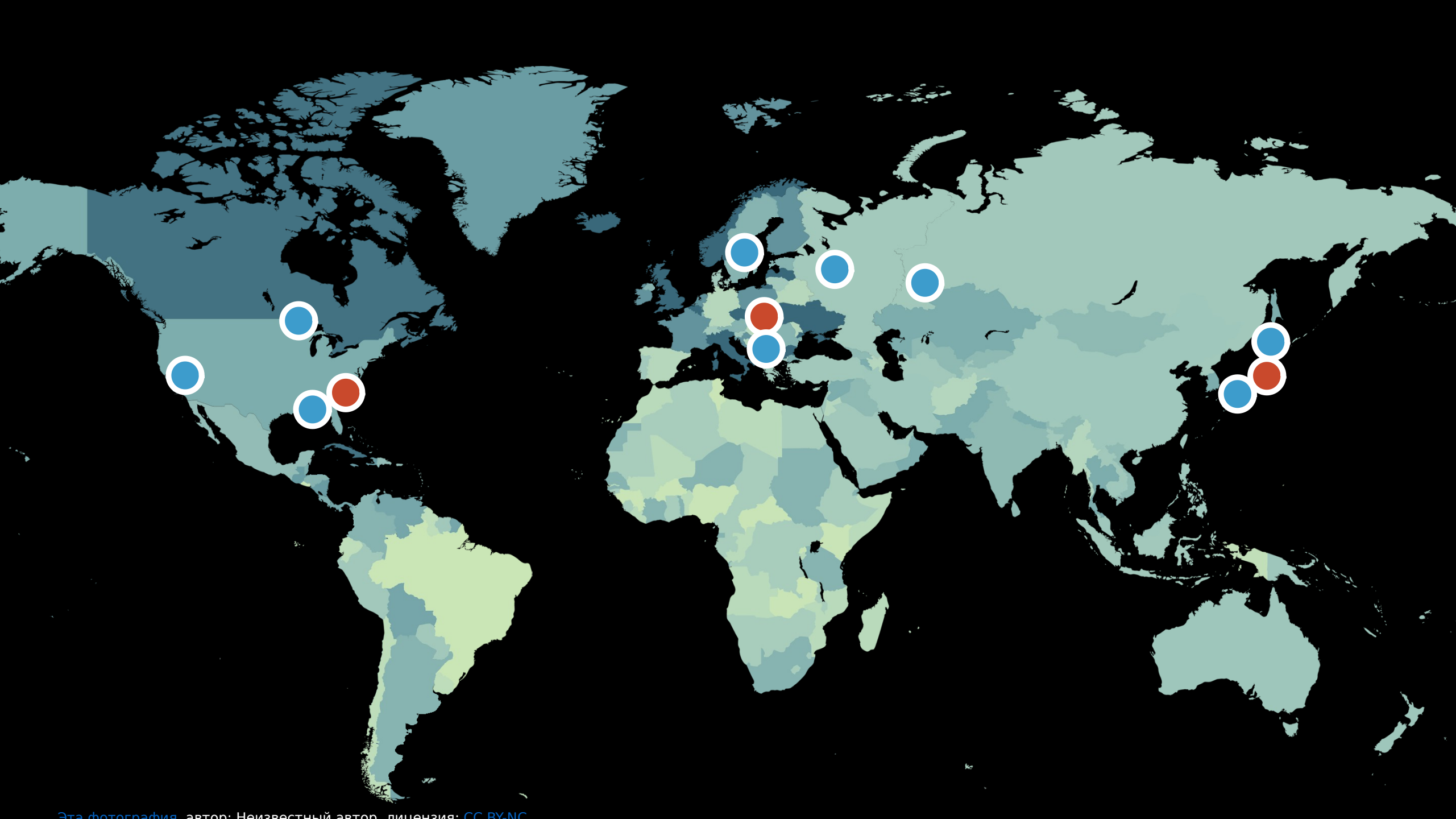
Cluster, v1

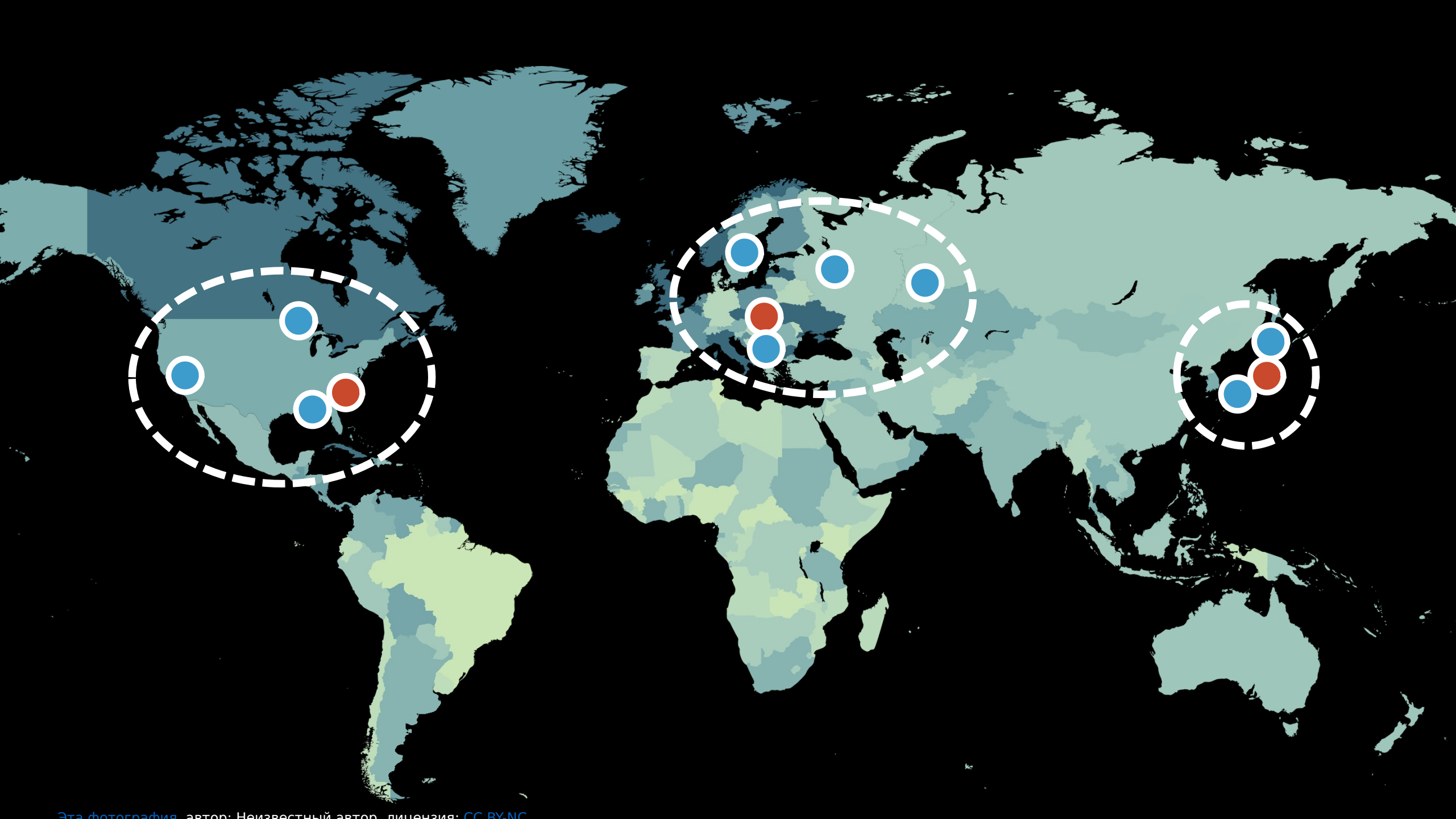


Cluster, V2, native communication



powered by proxypoller



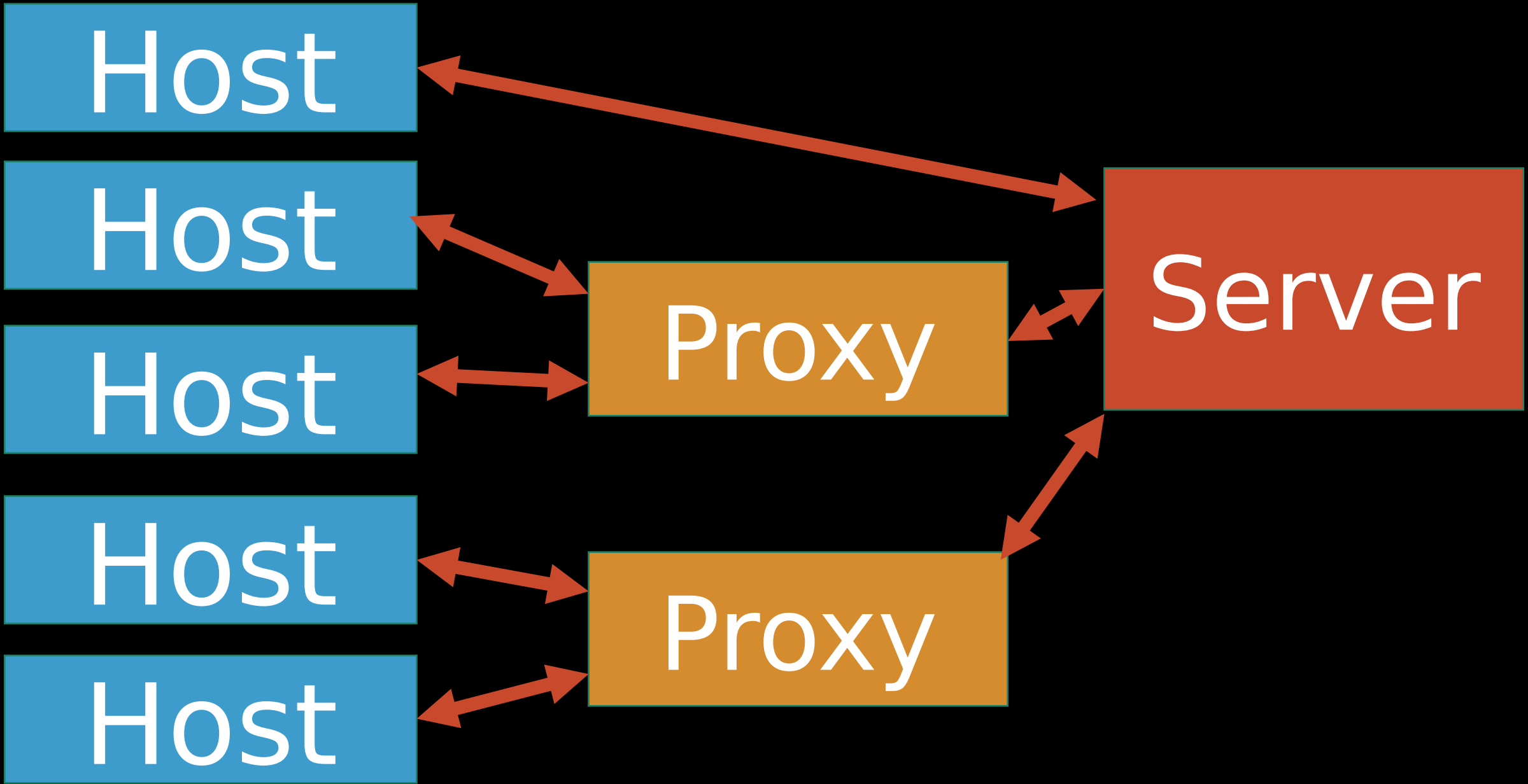


Распределение при аварии



Распределение хостов:

Домены мониторинга



Host

Host

Host

Host

Host

?

Proxy

Proxy

Server

Server

Server

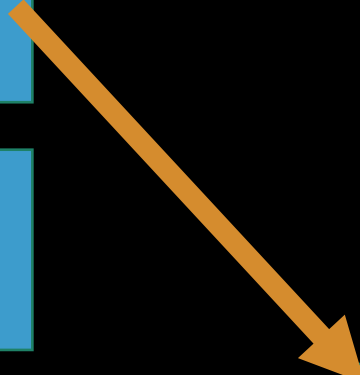
Host

Host

Host

Host

Host



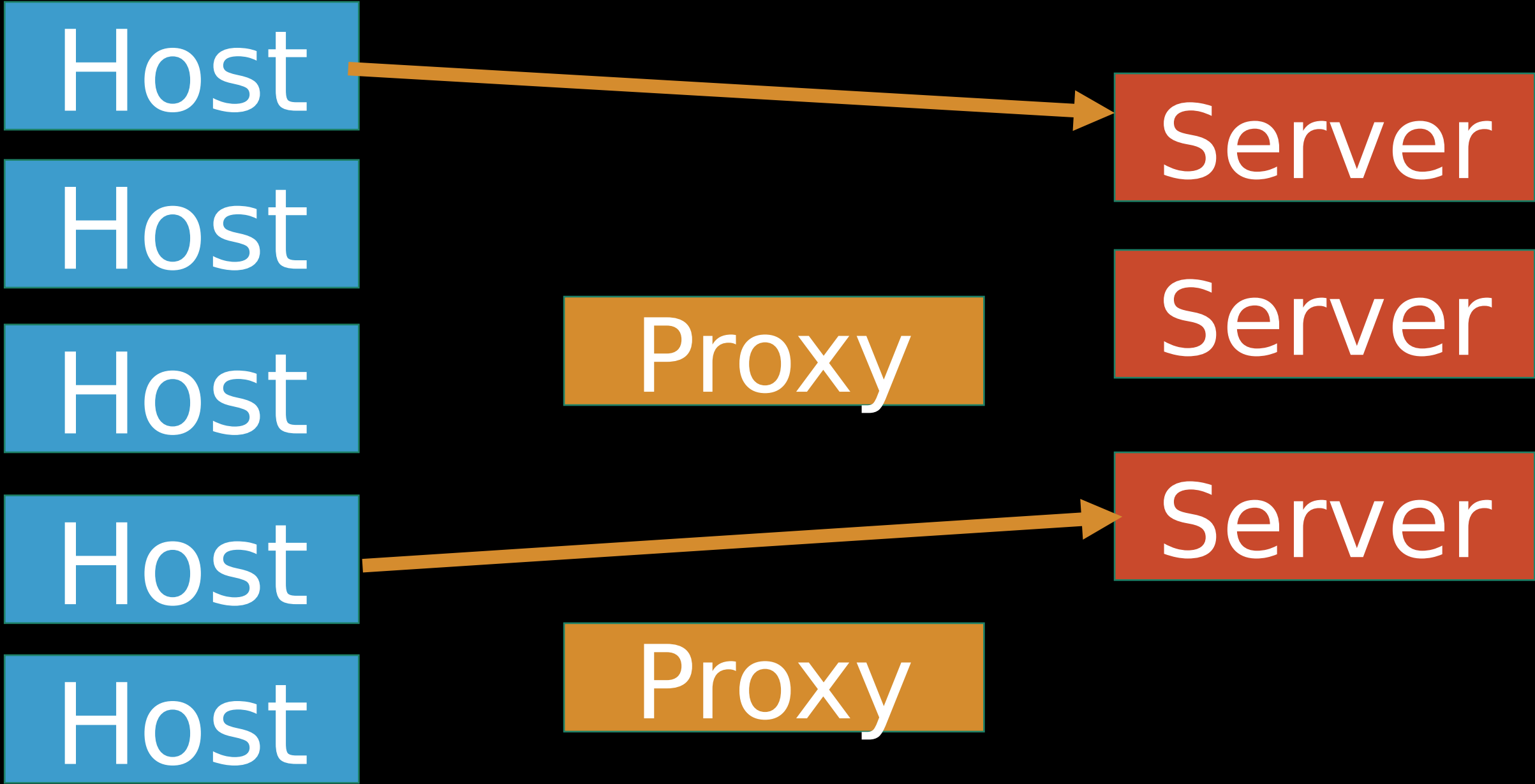
Proxy

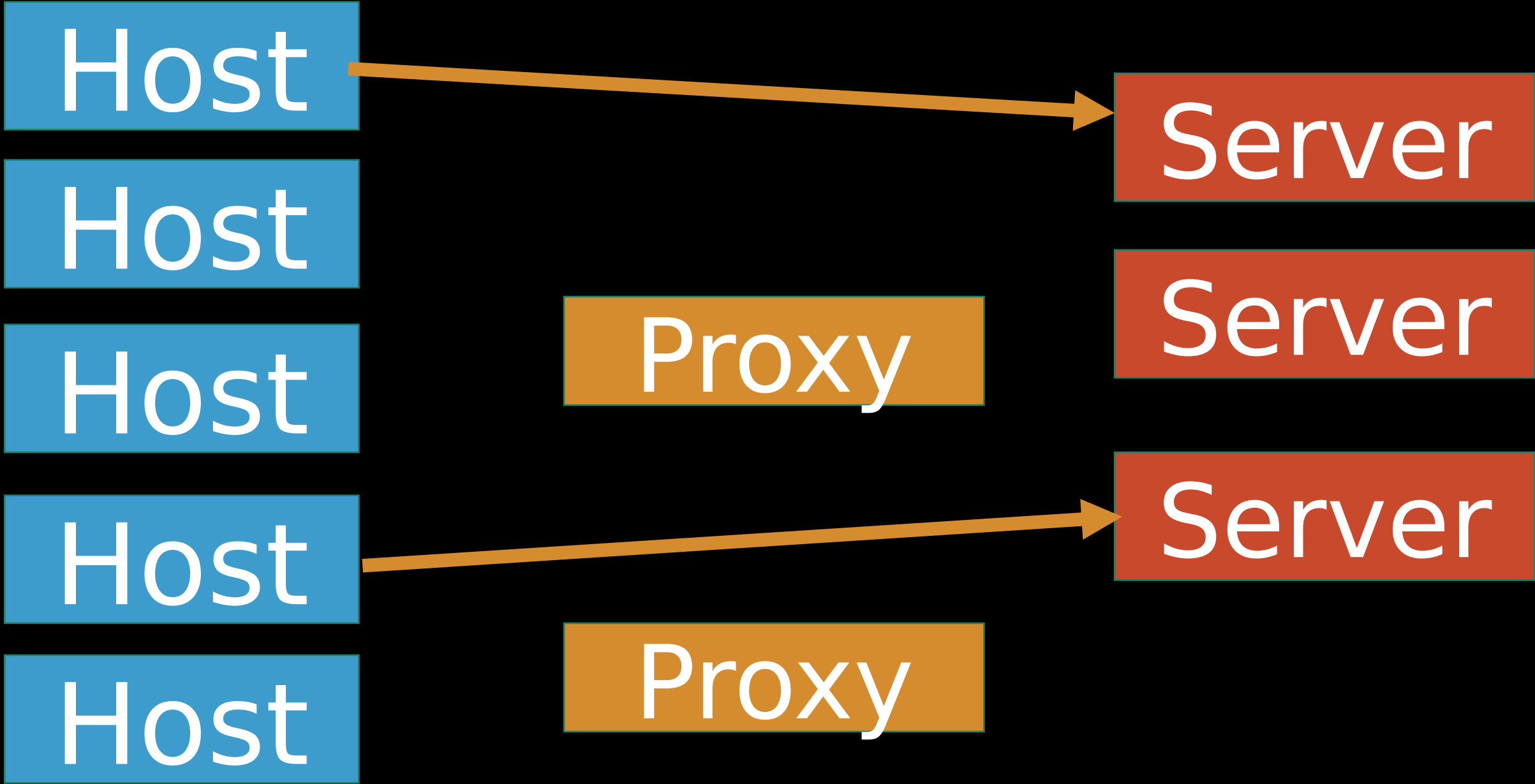
Proxy

Server

Server

Server





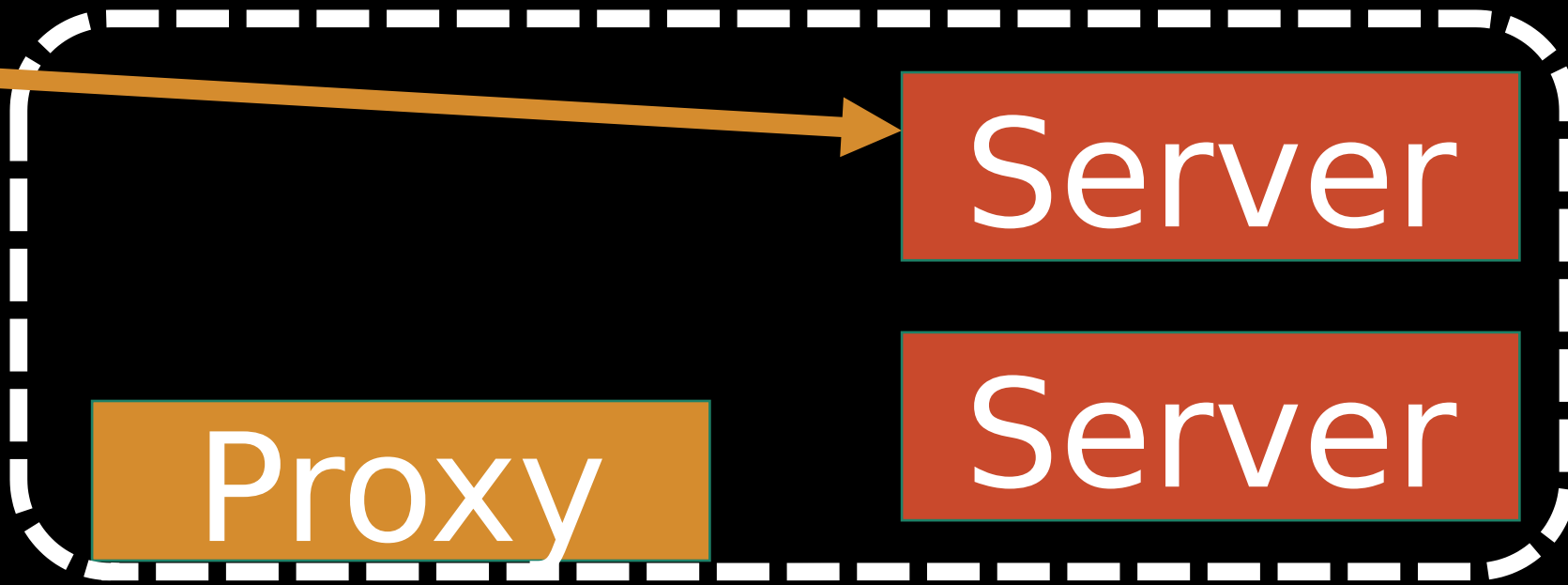
Host

Host

Host

Host

Host



Server

Server

Server

Proxy

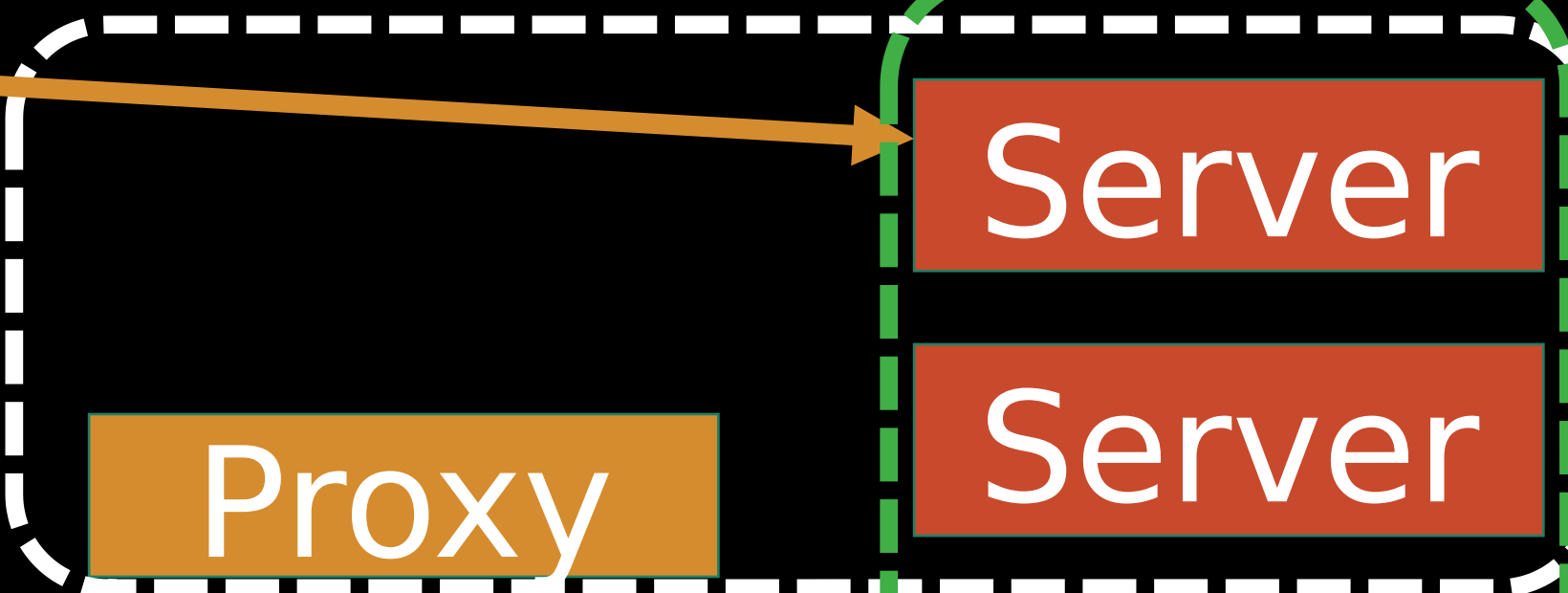
Host

Host

Host

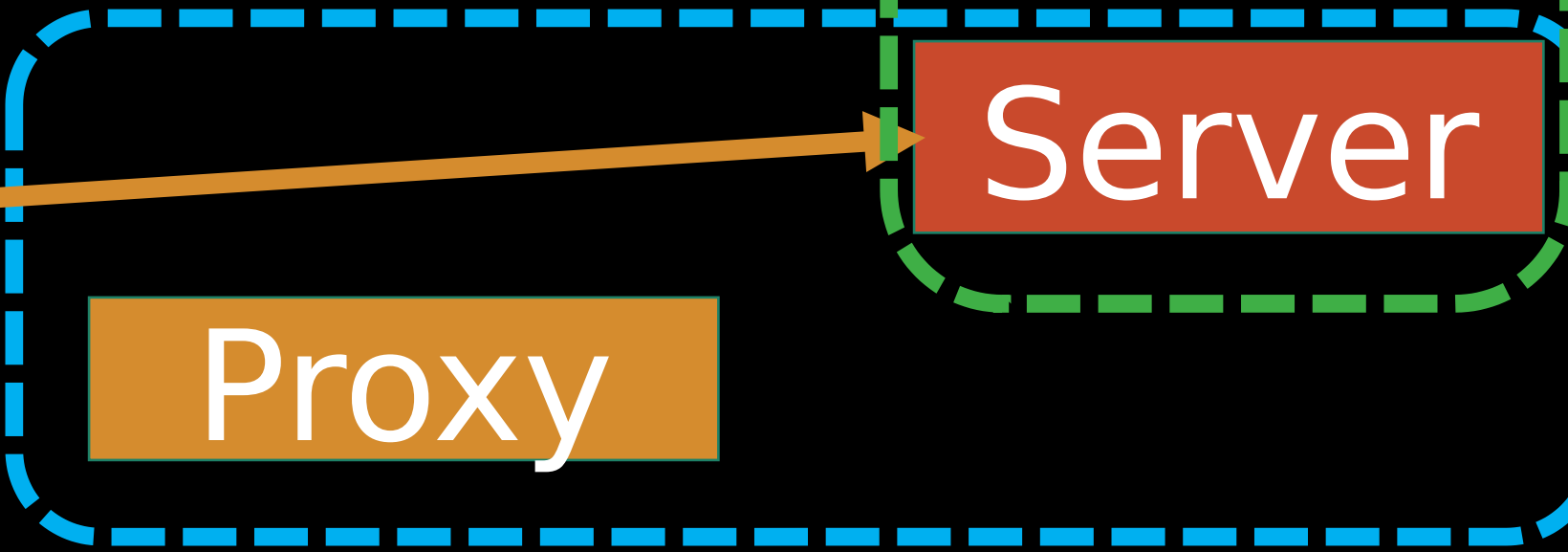
Host

Host

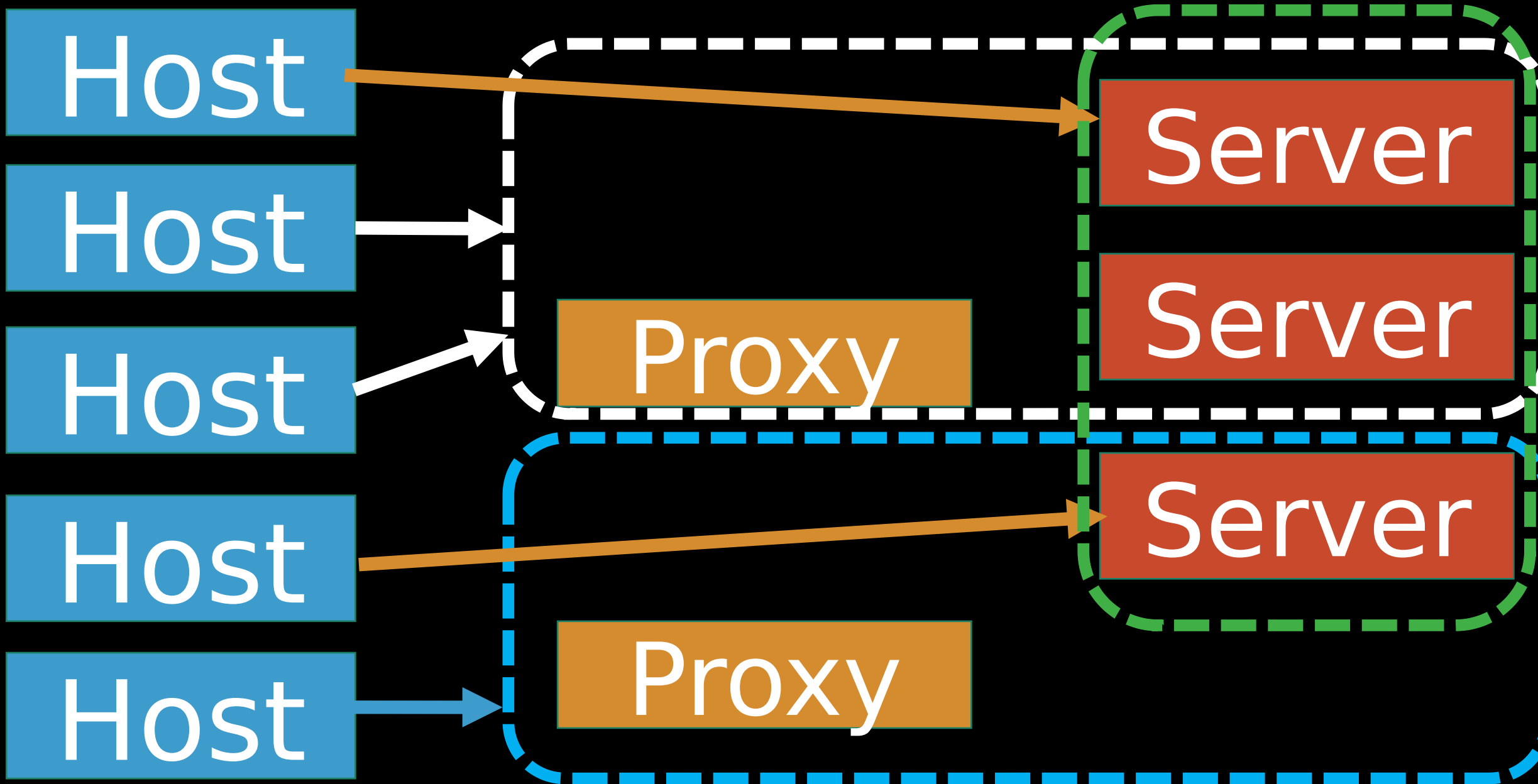


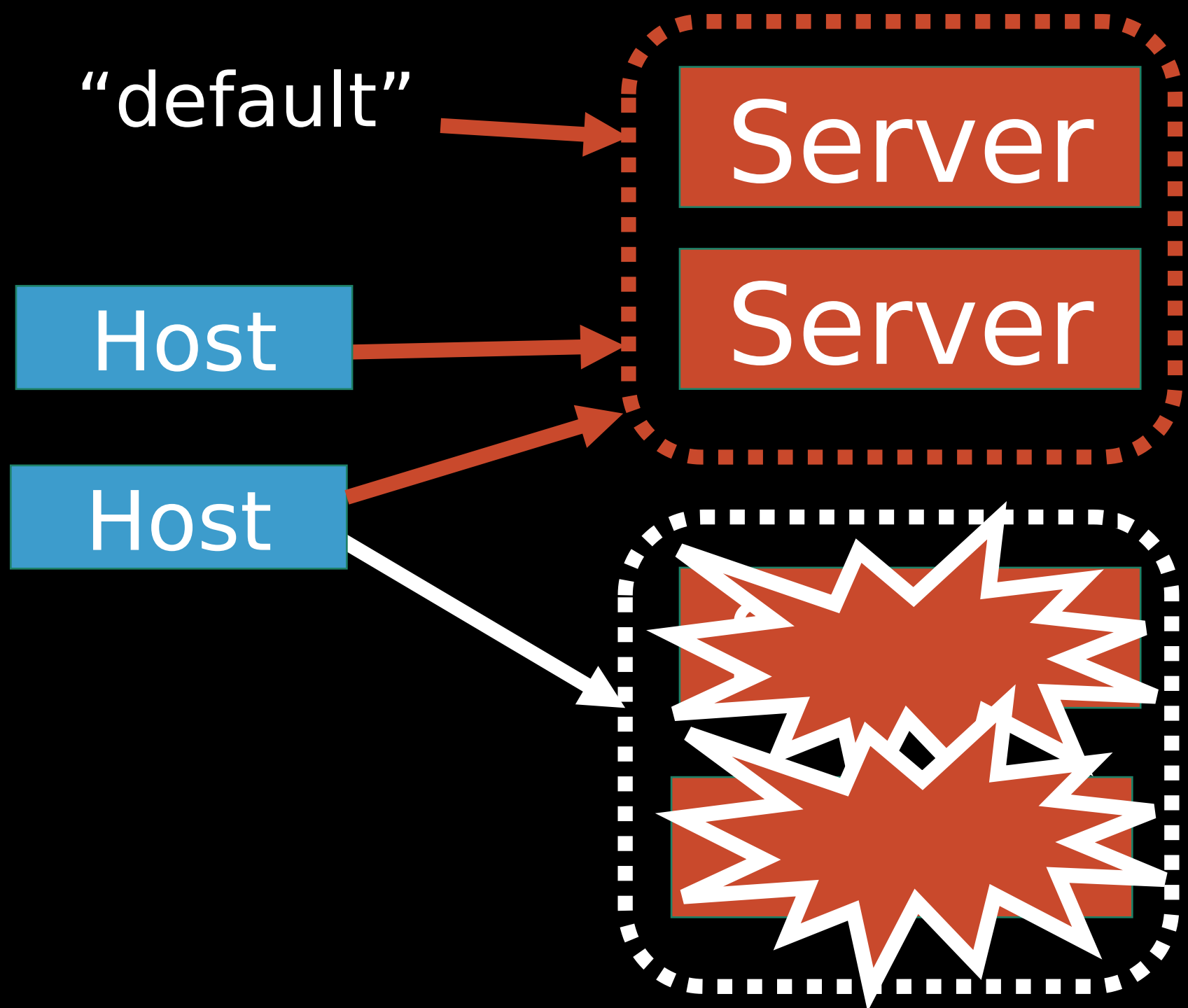
Server

Server



Server

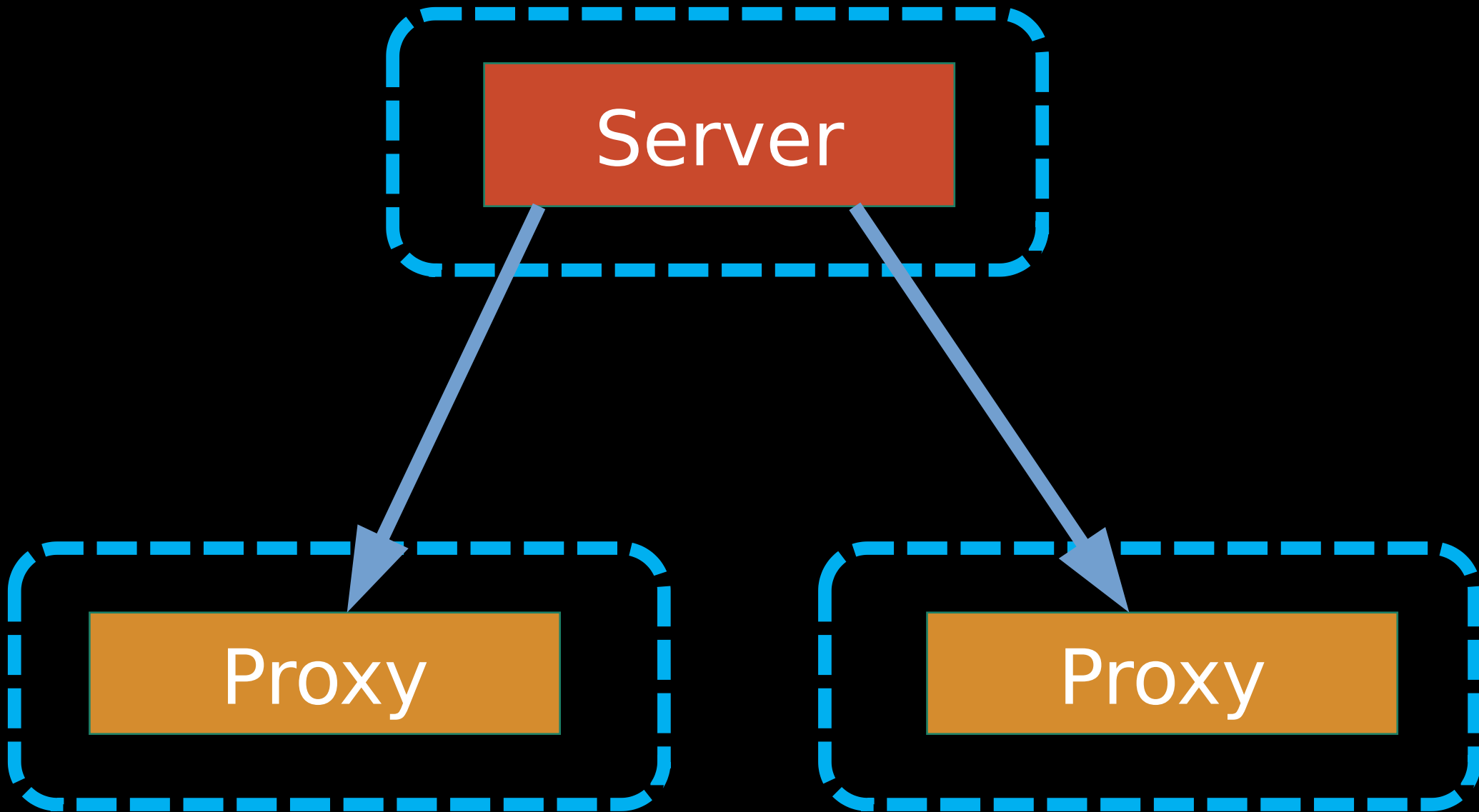


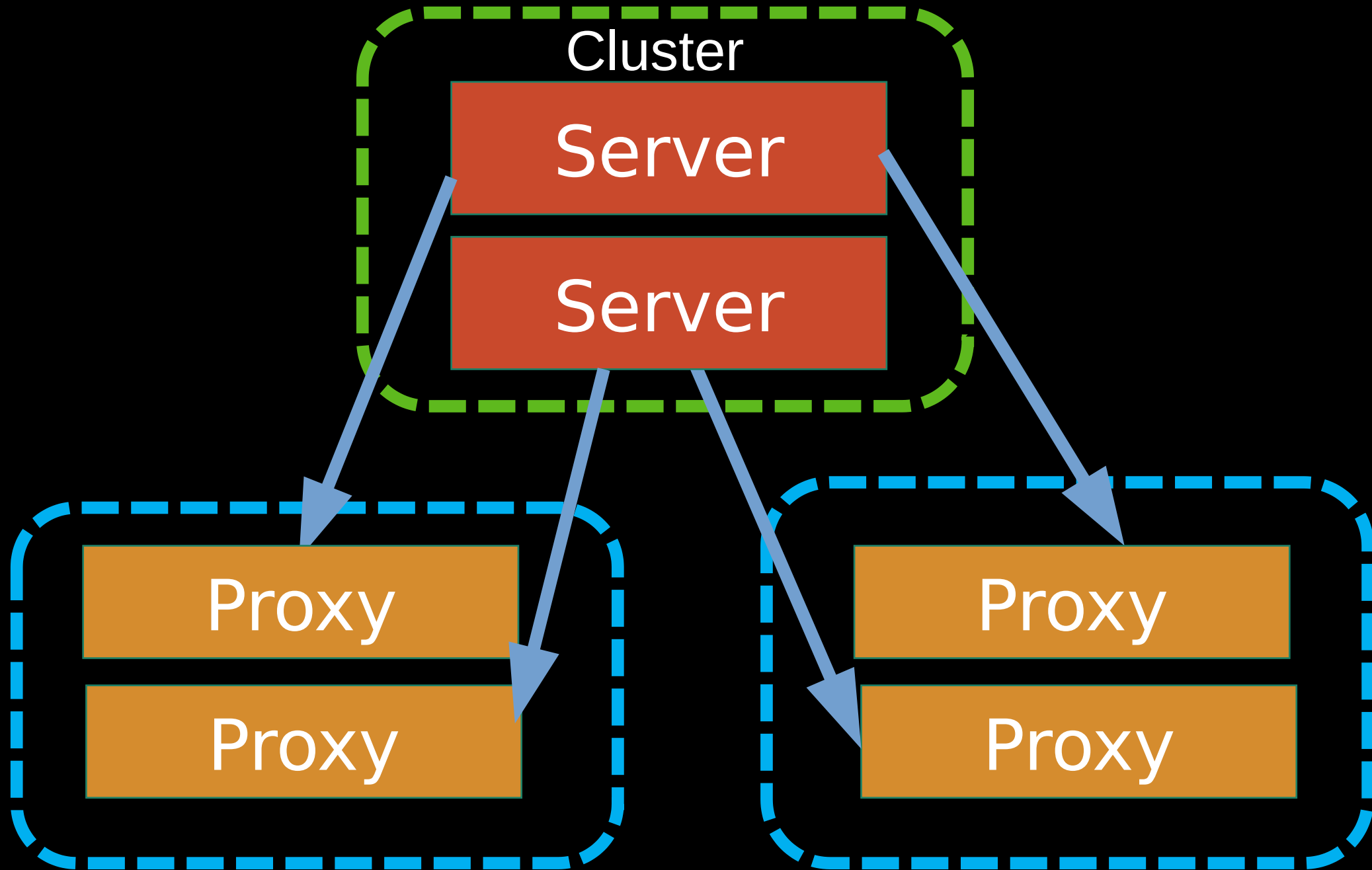


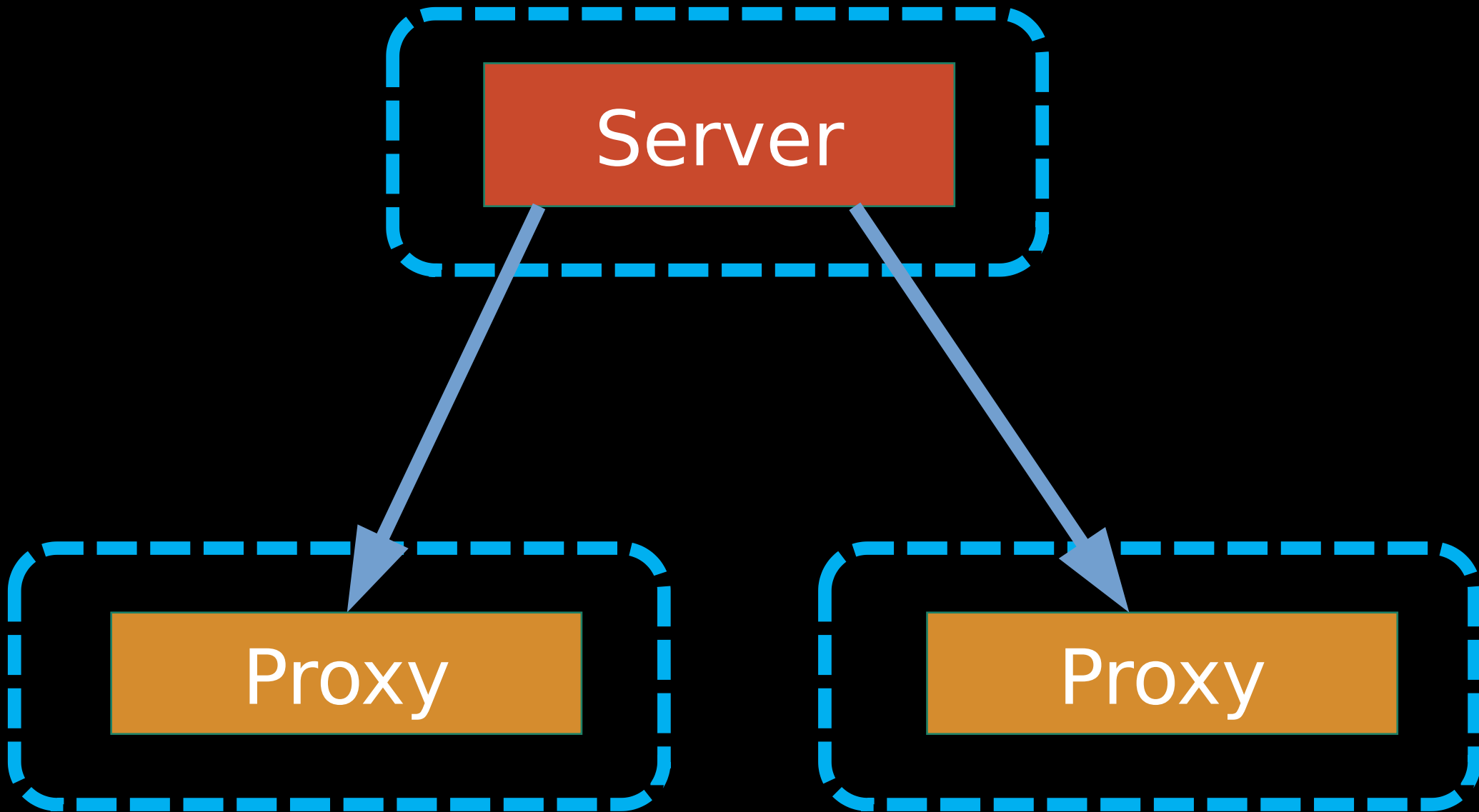
Редактирование хоста

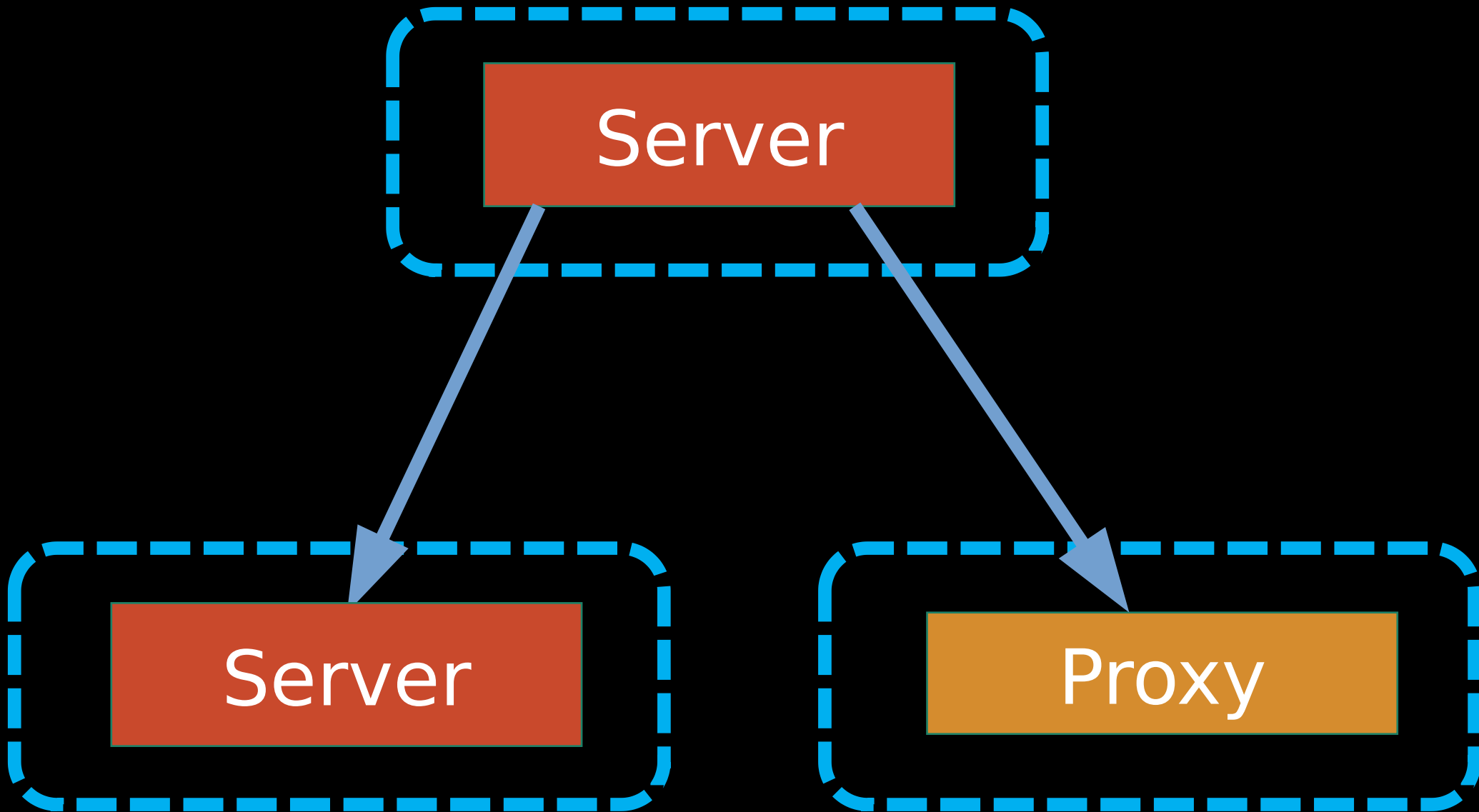
JMX interfaces	Add
IPMI interfaces	Add
Description	<ul style="list-style-type: none">(no server)default (Domain)test_passive_proxy2 (Passive proxy)test_proxy1 (Active proxy)test_server1.is74.ru (Server)test_server2.is74.ru (Server)
Monitored by	(no server) ▼
Enabled	<input checked="" type="checkbox"/>
<p>Update Clone Full clone Delete Cancel</p>	

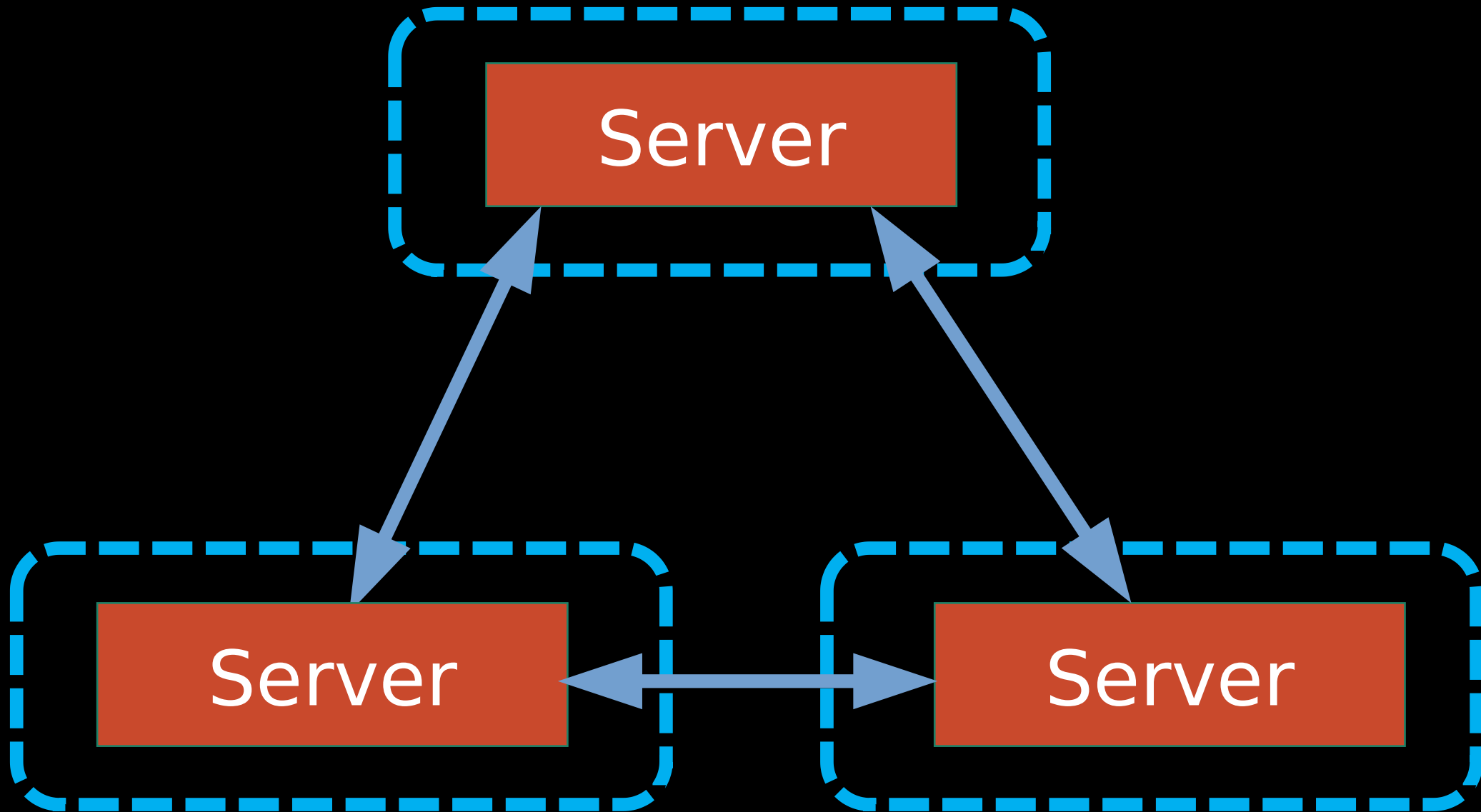
Кластер: Think Different

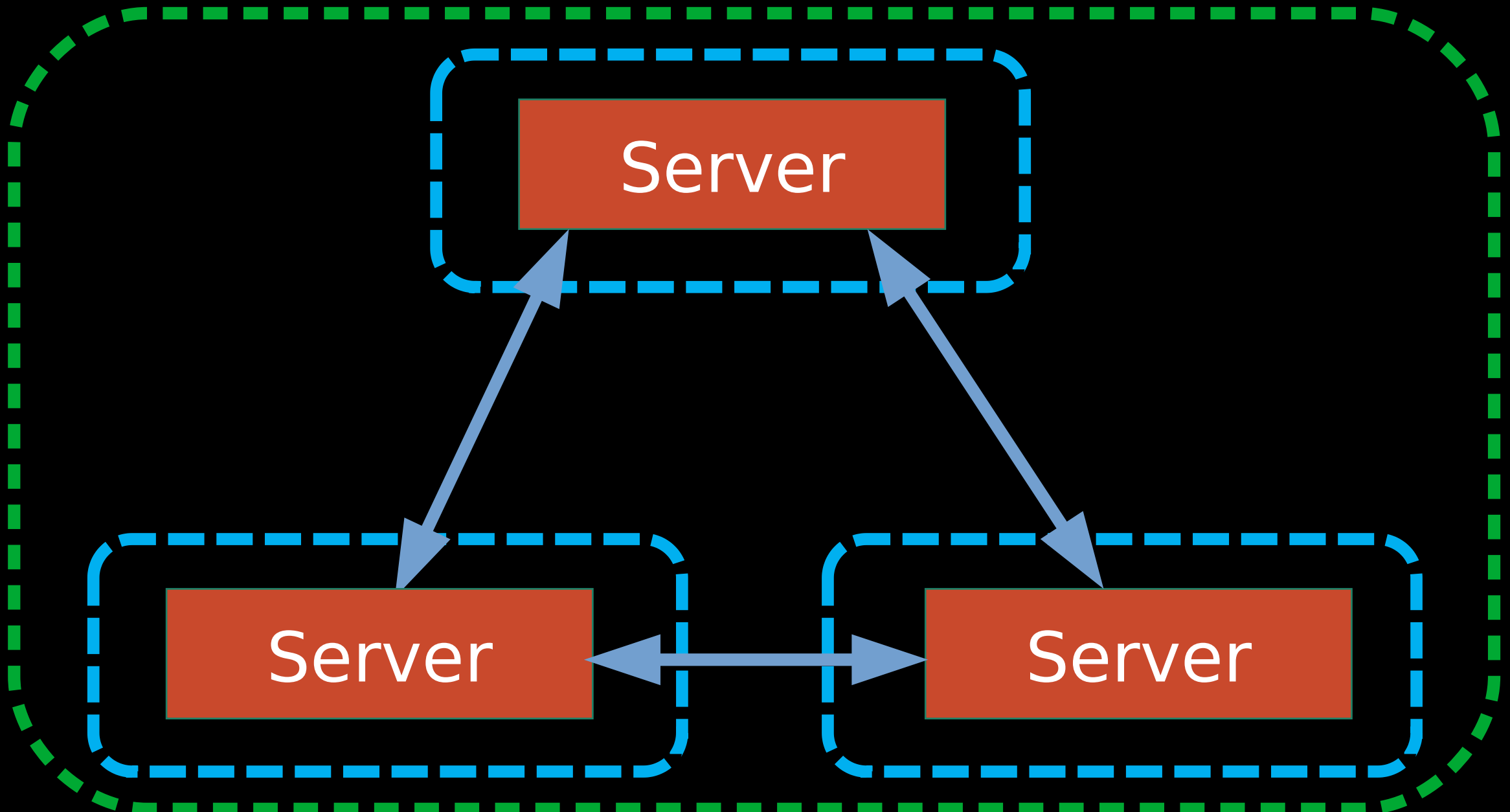








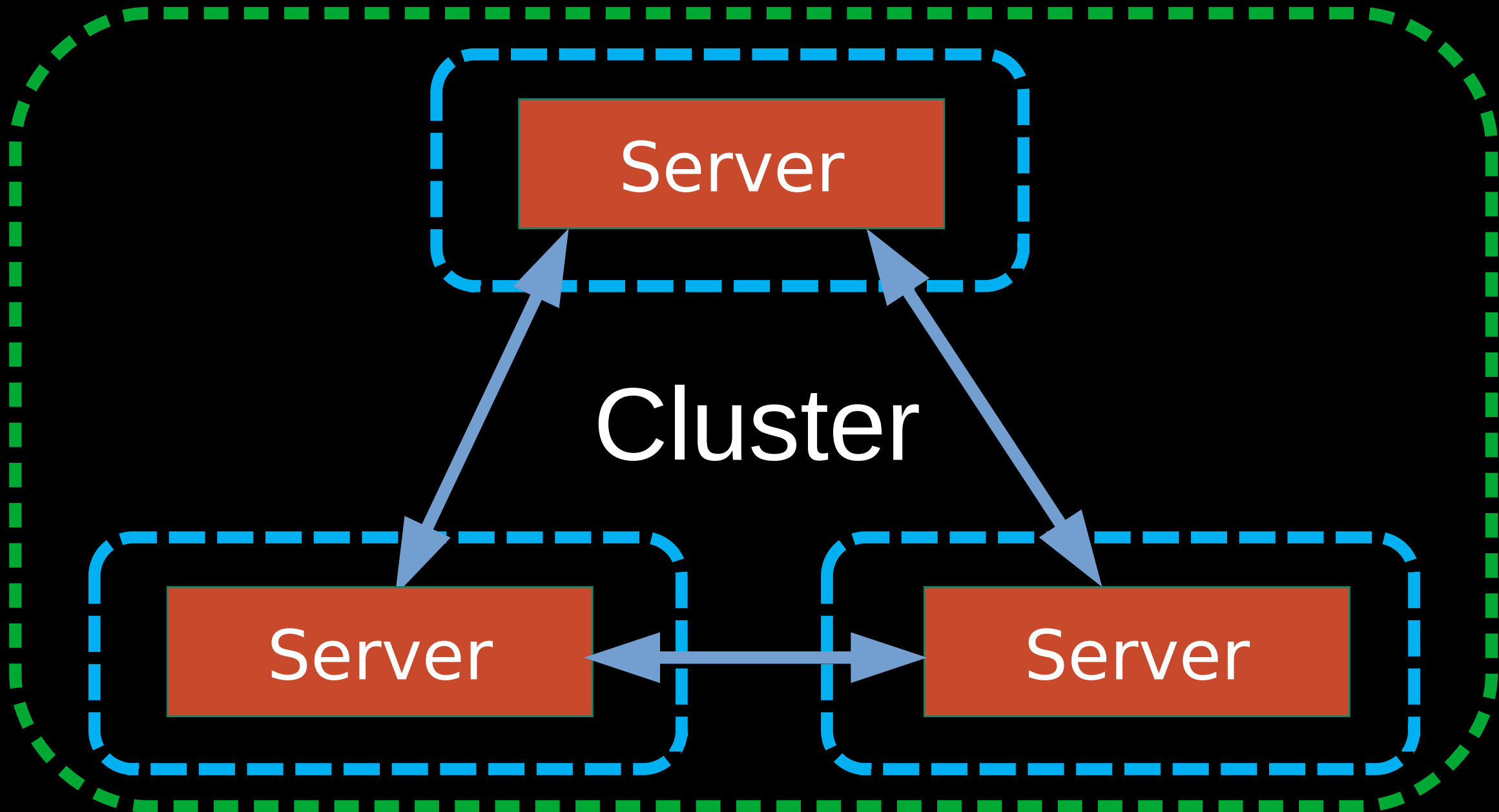




Server

Server

Server




Administration → Cluster management

General Cluster management Authentication User groups Users Media types Scripts Queue

zabbix-test.is74.ru

Cluster management

Add server/proxy/domain

Filter 

Name

Server type

Any

Proxy

Monitoring domain

Server

Apply

Reset

<input type="checkbox"/>	Name ▲	Type	Encryption	Compression	Last seen (age)	Host count	Item count	Required performance (vps)	Hosts
<input type="checkbox"/>	default	Monitoring Domain				0	0	0	
<input type="checkbox"/>	test_passive_proxy2	Passive Proxy	NONE		Never	0	0	0	
<input type="checkbox"/>	test_proxy1	Active Proxy	NONE	ON	1s	0	0	0	
<input type="checkbox"/>	test_server1.is74.ru	Server			7s	0	0	0	default
<input type="checkbox"/>	test_server2.is74.ru	Server			7s	0	0	0	default

Displaying 5 of 5 found

0 selected

Delete

Administratio

General Cluster management Authentication User groups

Cluster management

Name

<input type="checkbox"/>	Name ▲	Type	Encryption
<input type="checkbox"/>	default	Monitoring Domain	
<input type="checkbox"/>	test_passive_proxy2	Passive Proxy	N
<input type="checkbox"/>	test_proxy1	Active Proxy	N
<input type="checkbox"/>	test_server1.is74.ru	Server	
<input type="checkbox"/>	test_server2.is74.ru	Server	

Type

Monitoring Domain

Passive Proxy


Active Proxy

Server

Server

zabbix-test.is74.ru

Add server/proxy/domain

Filter 

server

Required performance (vps) Hosts

default

default

Displaying 5 of 5 found

0 selected

Delete


Administration → Cluster management

zabbix-test.is74.ru

General Cluster management Authentication User groups Users Media types Scripts Queue

Cluster management

Add server/proxy/domain

Filter 

Name

Server type

Any

Proxy

Monitoring domain

Server

Apply

Reset

<input type="checkbox"/>	Name ▲	Type	Encryption	Compression	Last seen (age)	Host count	Item count	Required performance (vps)	Hosts
<input type="checkbox"/>	default	Monitoring Domain				0	0	0	
<input type="checkbox"/>	test_passive_proxy2	Passive Proxy	NONE		Never	0	0	0	
<input type="checkbox"/>	test_proxy1	Active Proxy	NONE	ON	1s	0	0	0	
<input type="checkbox"/>	test_server1.is74.ru	Server			7s	0	0	0	default
<input type="checkbox"/>	test_server2.is74.ru	Server			7s	0	0	0	default

Displaying 5 of 5 found

0 selected

Delete

Cluster objects

Monitoring domain/Server/Proxy

Encryption

Cluster object type

Monitoring Domain

Server

Active Proxy

Passive Proxy

* Name

* Interface

IP address

DNS name

Connect to

Port

127.0.0.1

localhost

IP

DNS

10051

Domains

type here to search

Select

Description

Add

Cancel

Cluster objects

Monitoring domain/Server/Proxy

Encryption

Cluster object type

Monitoring Domain

Server

Active Proxy

Passive Proxy

* Name

* Interface

IP address

DNS name

Connect to

Port

127.0.0.1

localhost

IP

DNS

10051

Domains

type here to search

Select

Description

Add

Cancel

Domains ✕

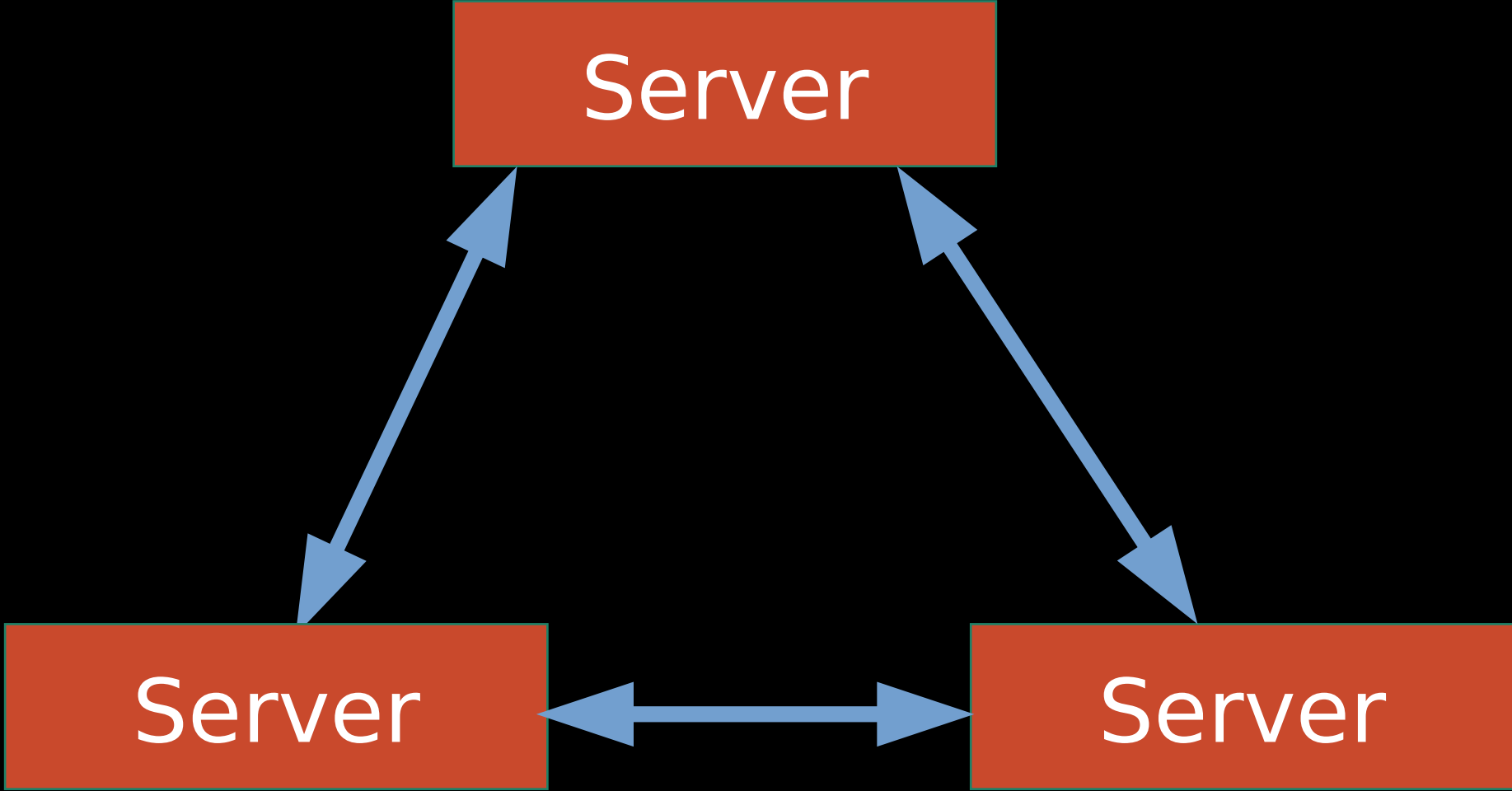
- Host
- Chel area
- default
- Moscow area

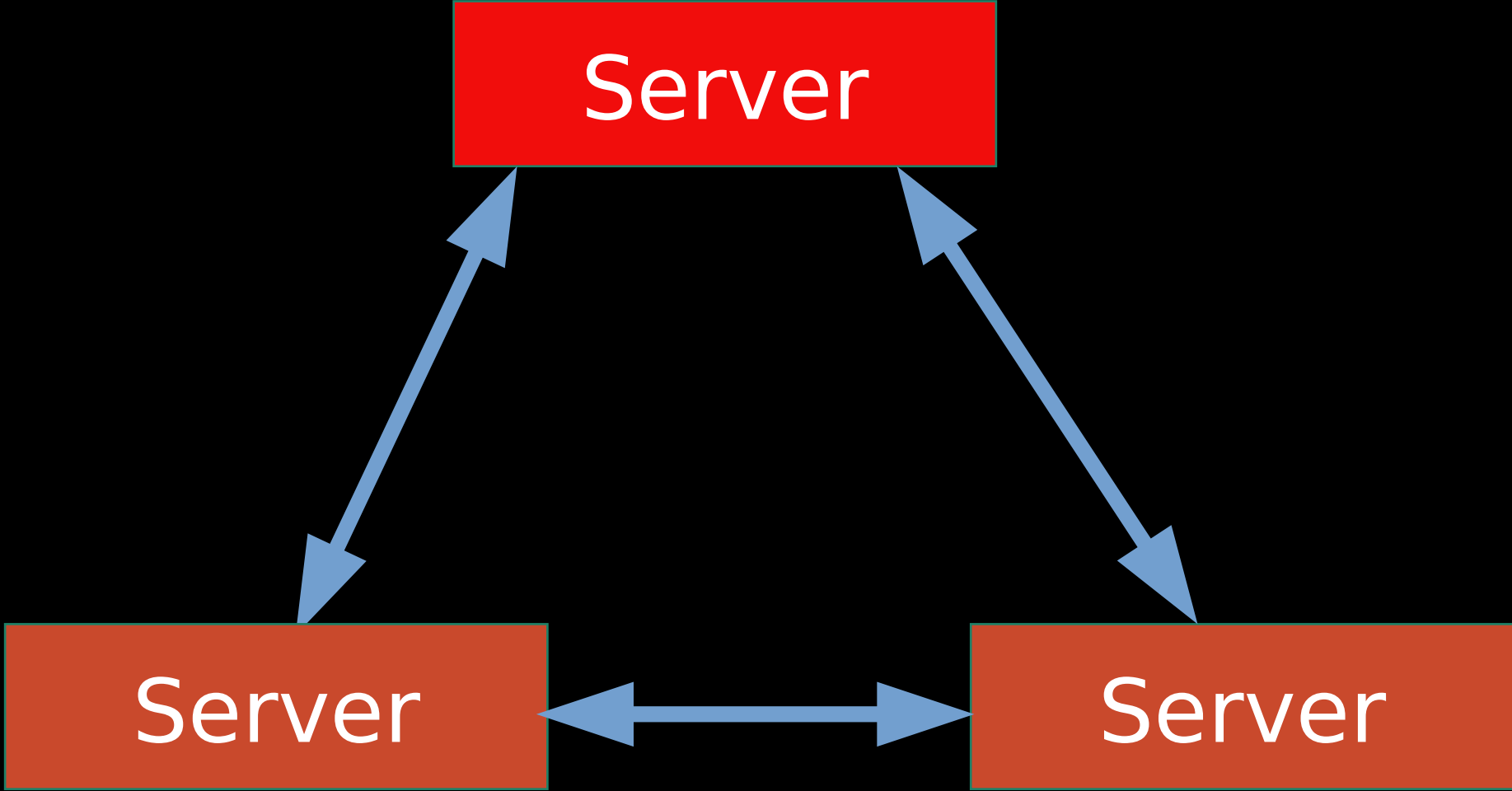
Domains

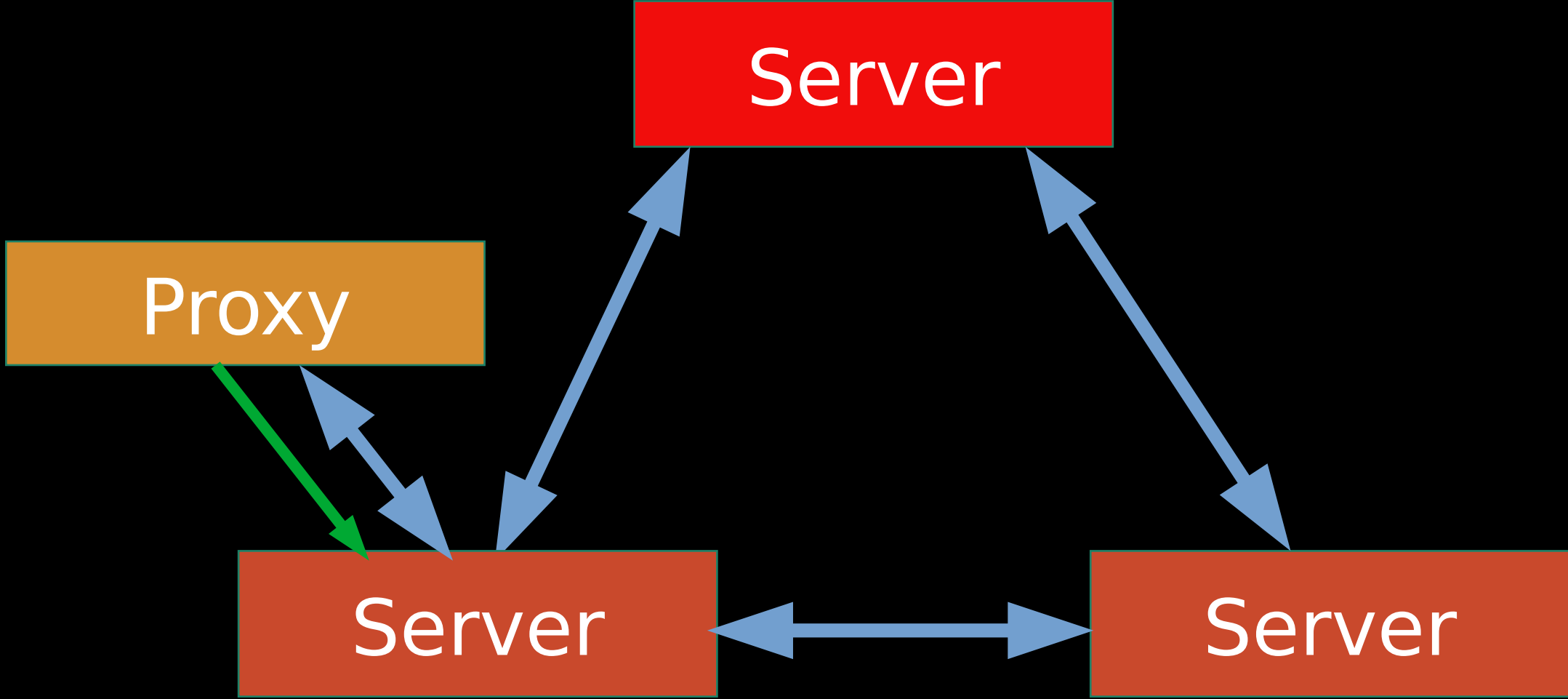
Description

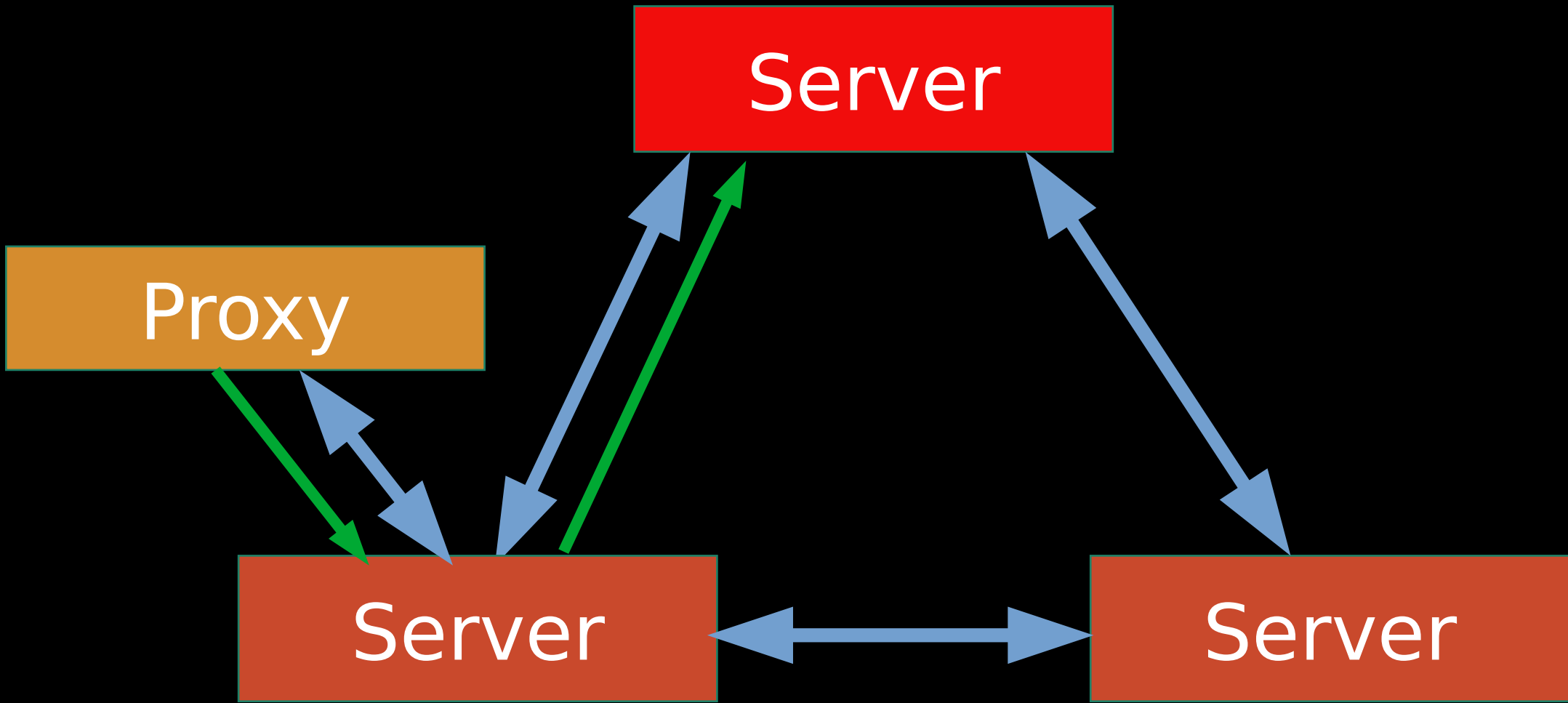


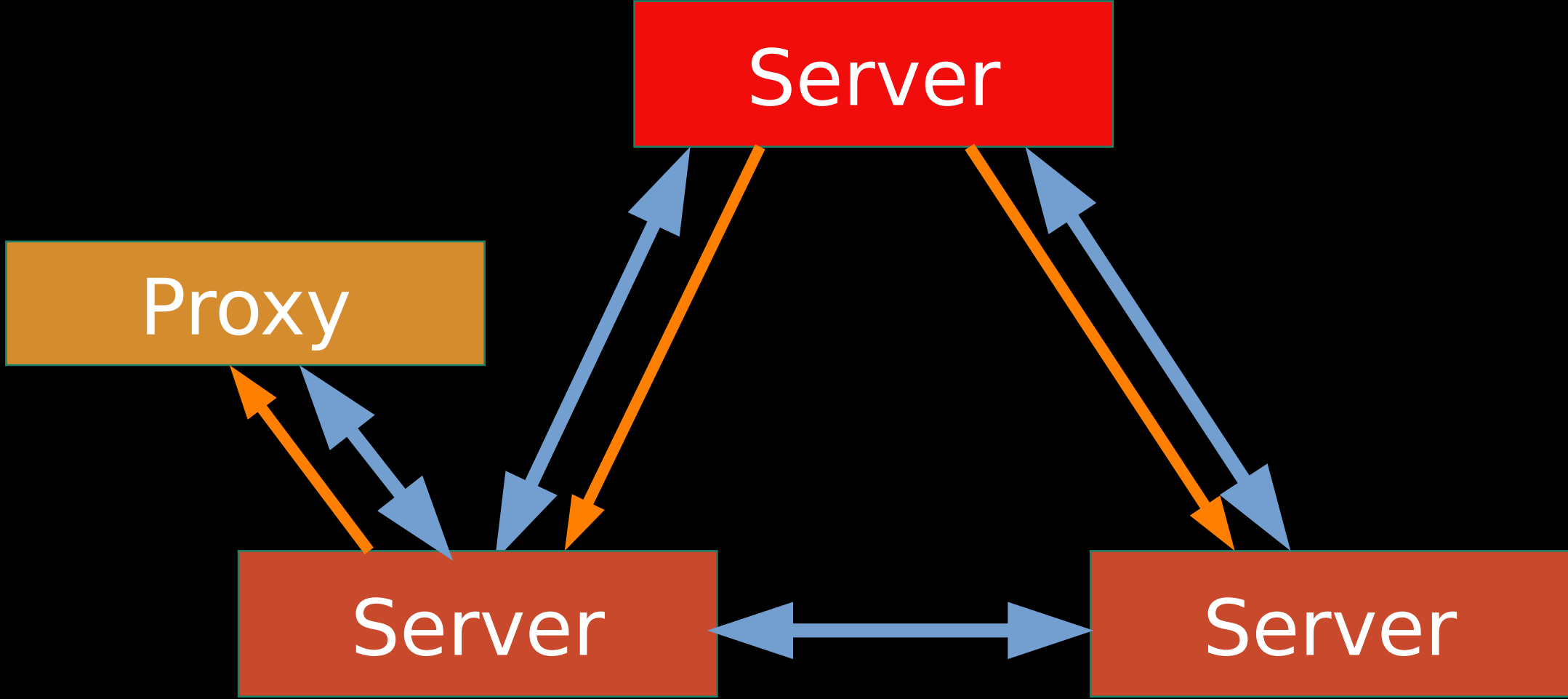
Топология:









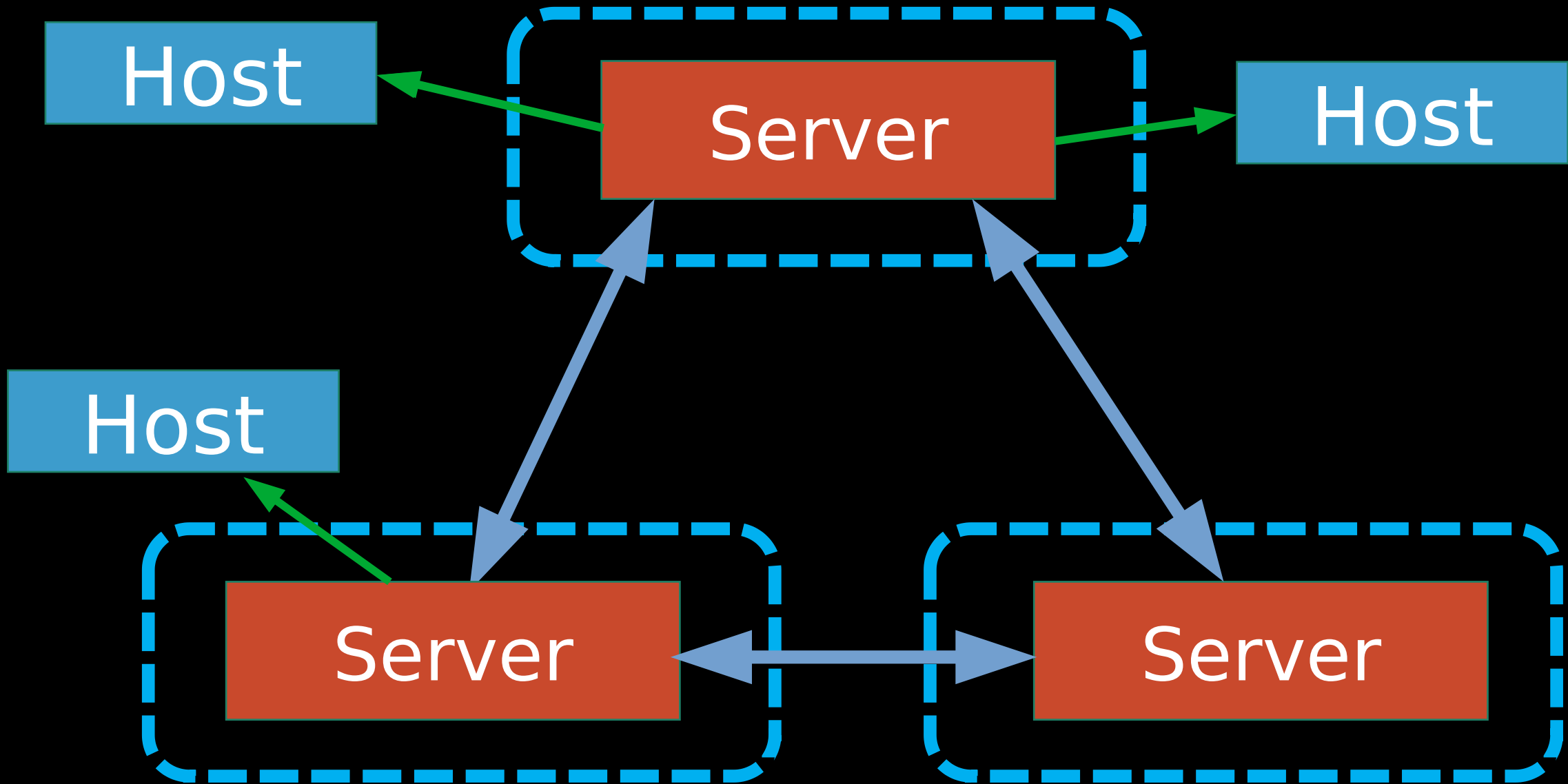


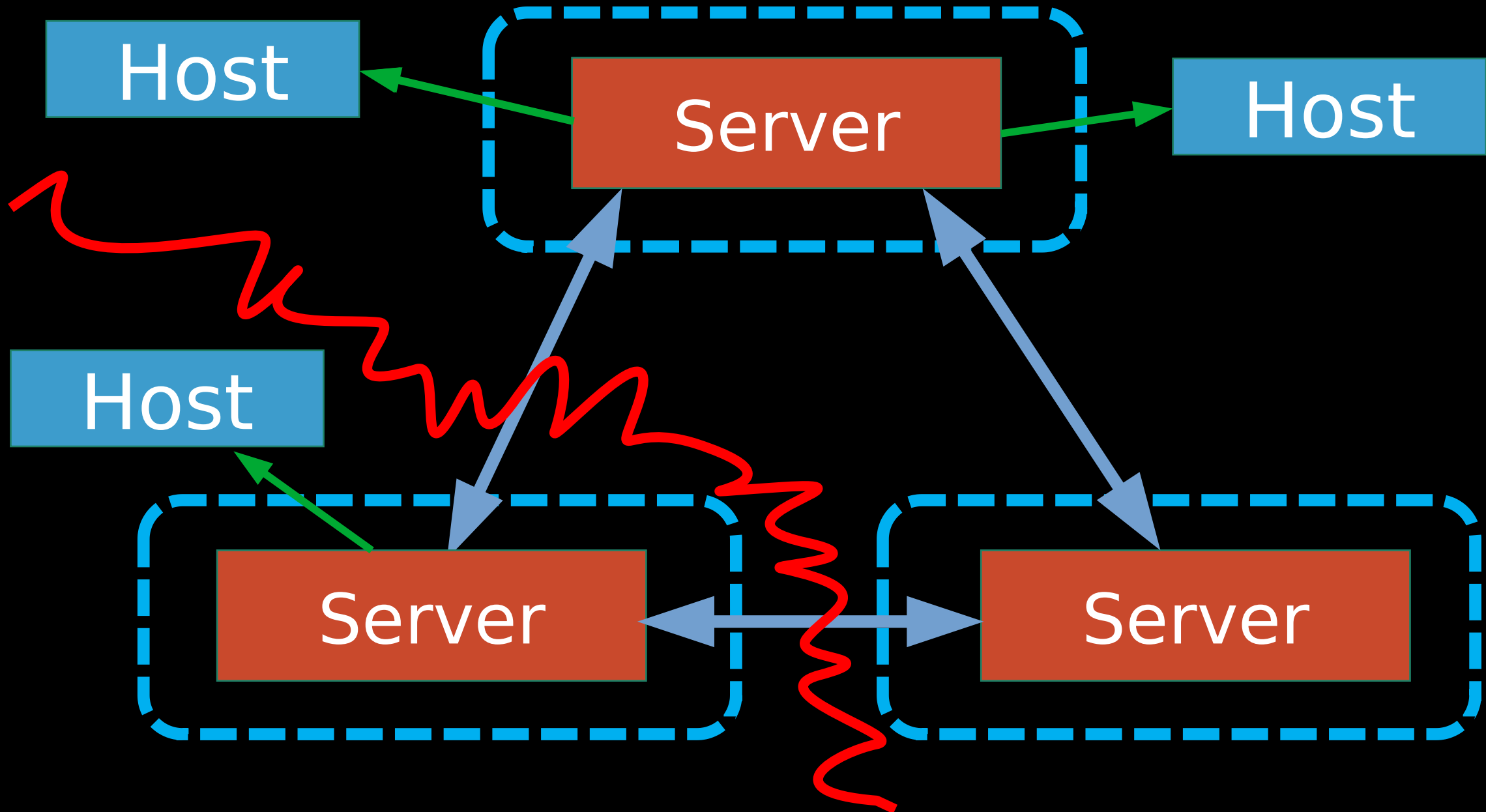
Поведение:

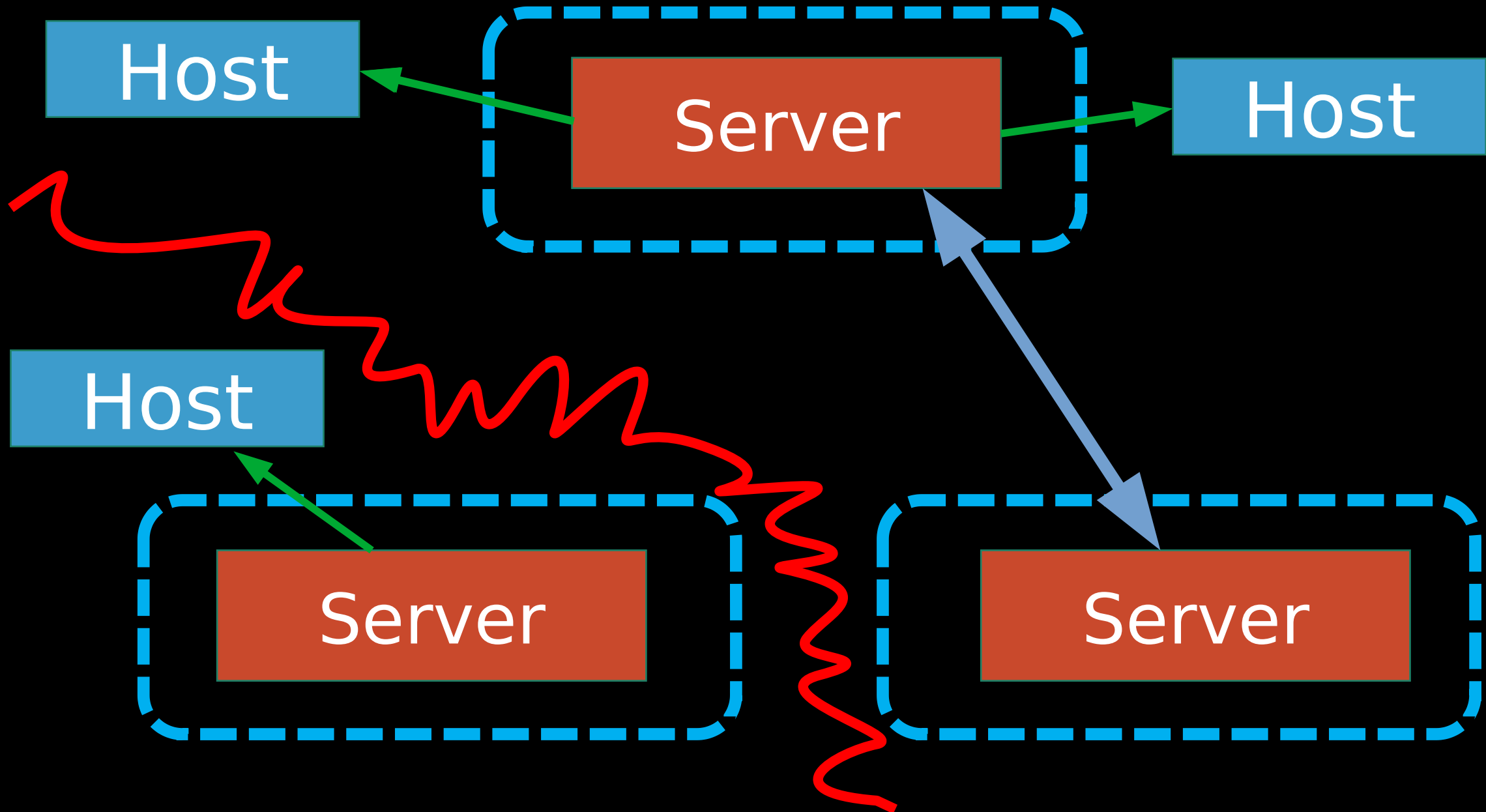
Поведение:

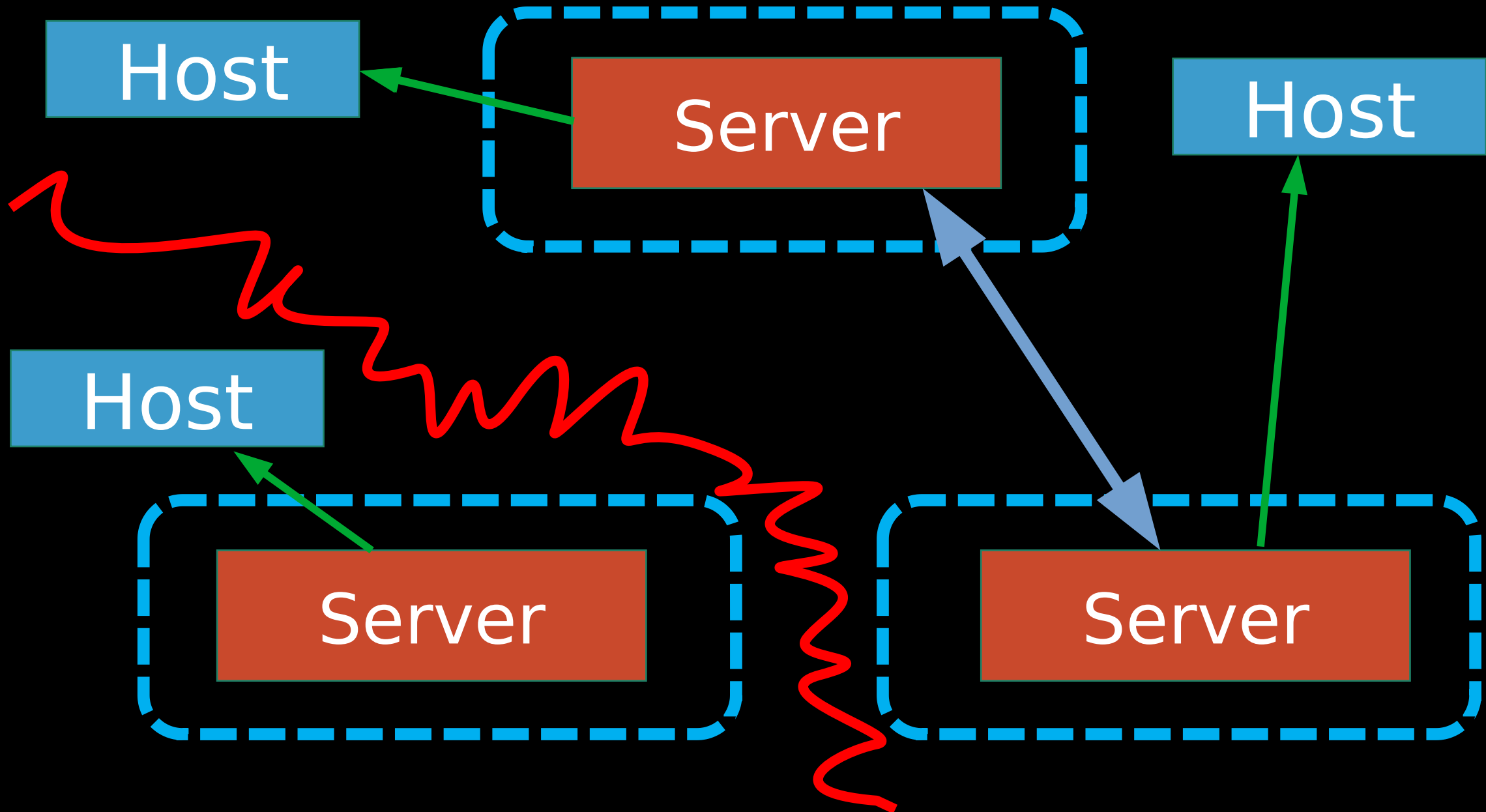
split brain

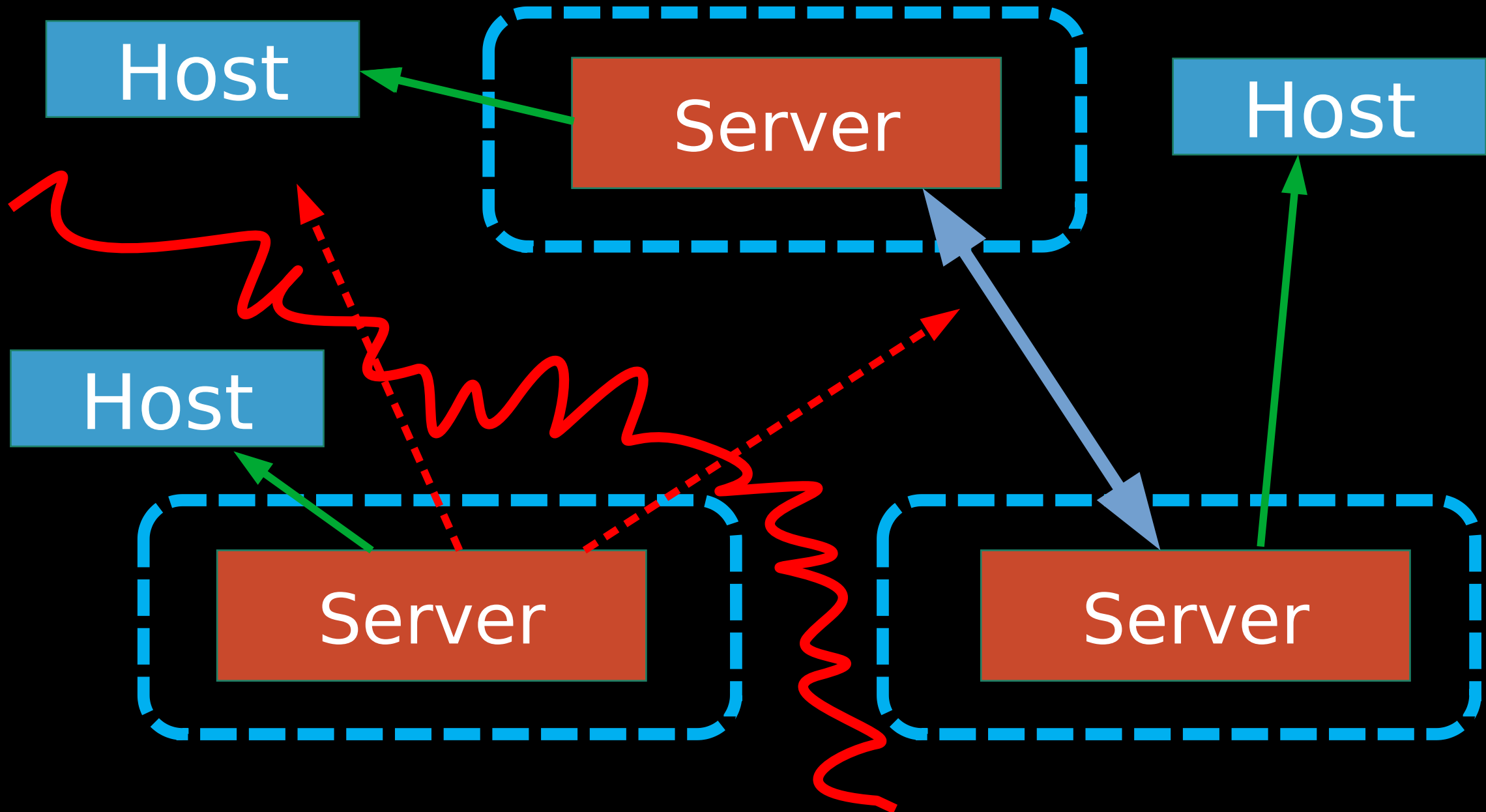
point of view

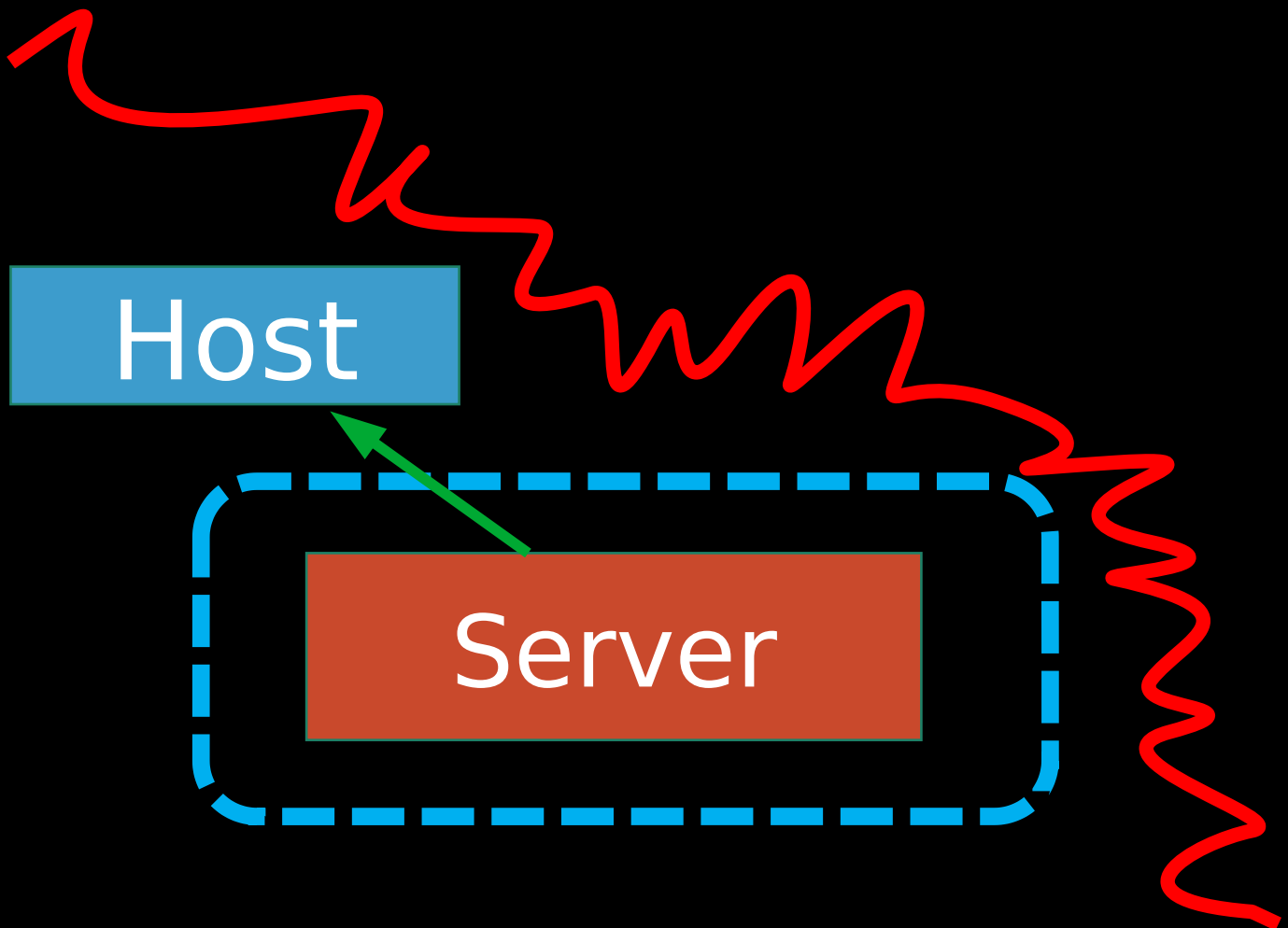


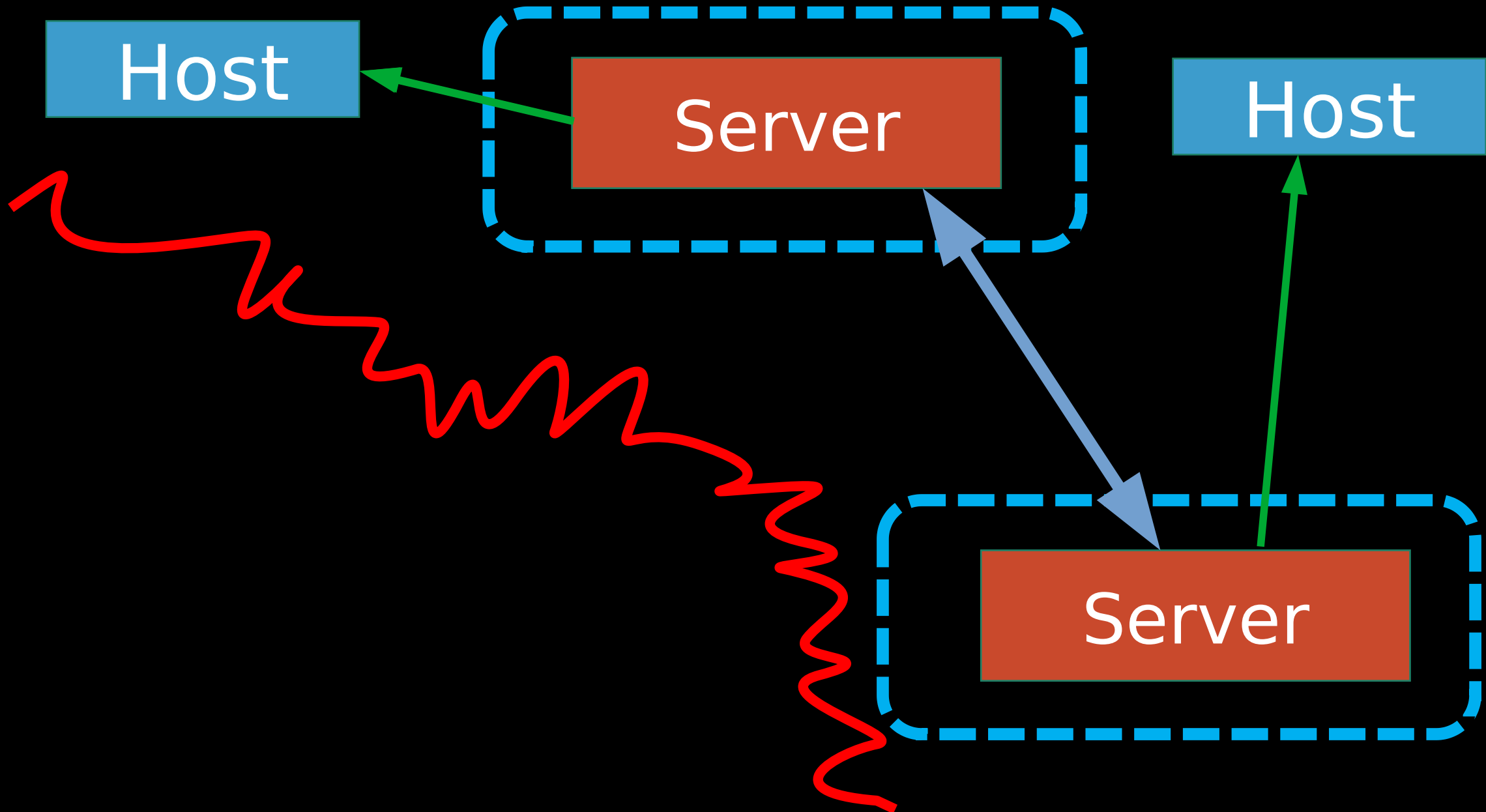


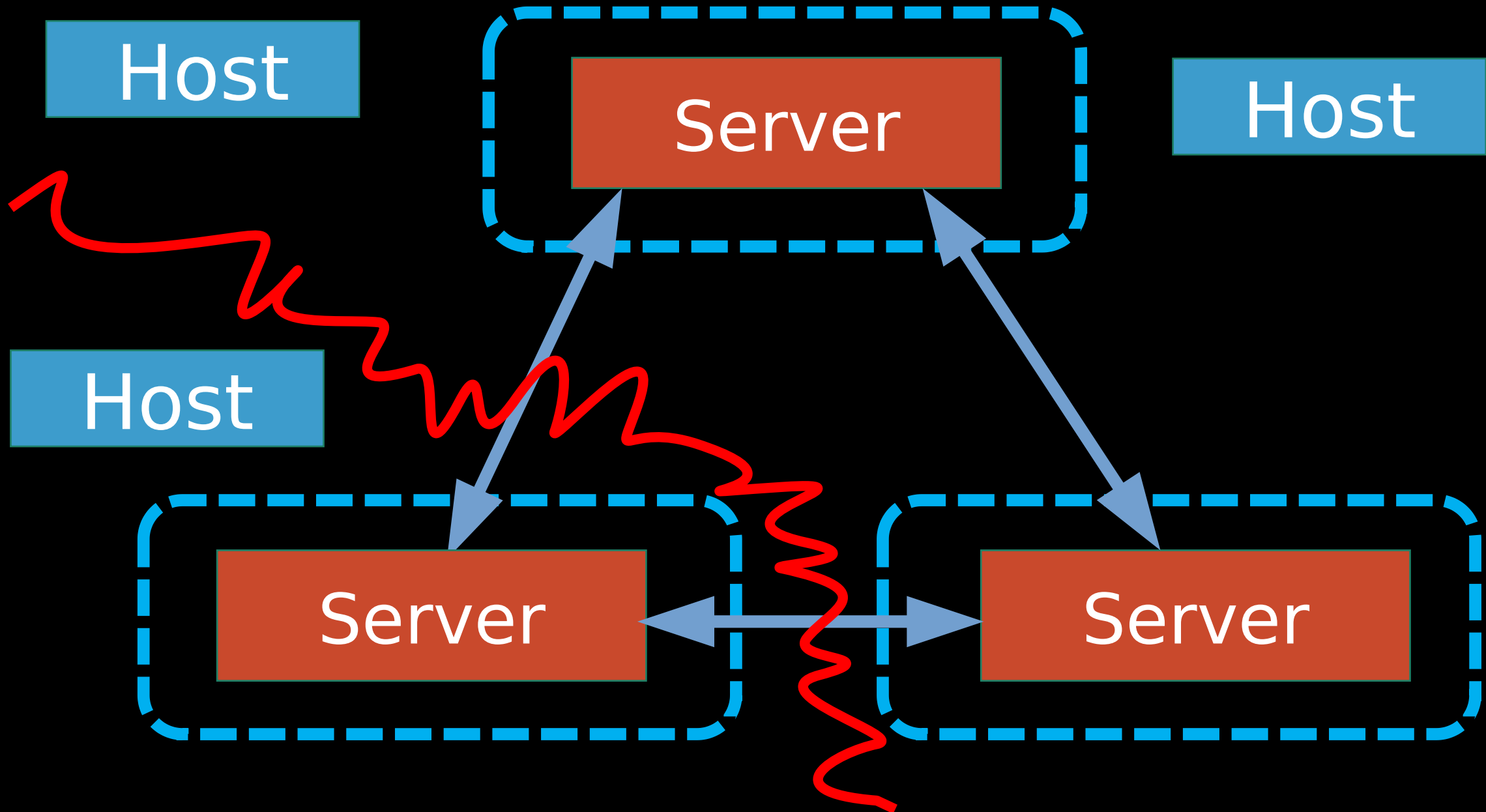












Host

Host

Host

Server

Server

Server

- {SERVER.NAME}
- {SERVER.ID}
- {SERVER.IP}

Прокси

Прокси: Активные

Server

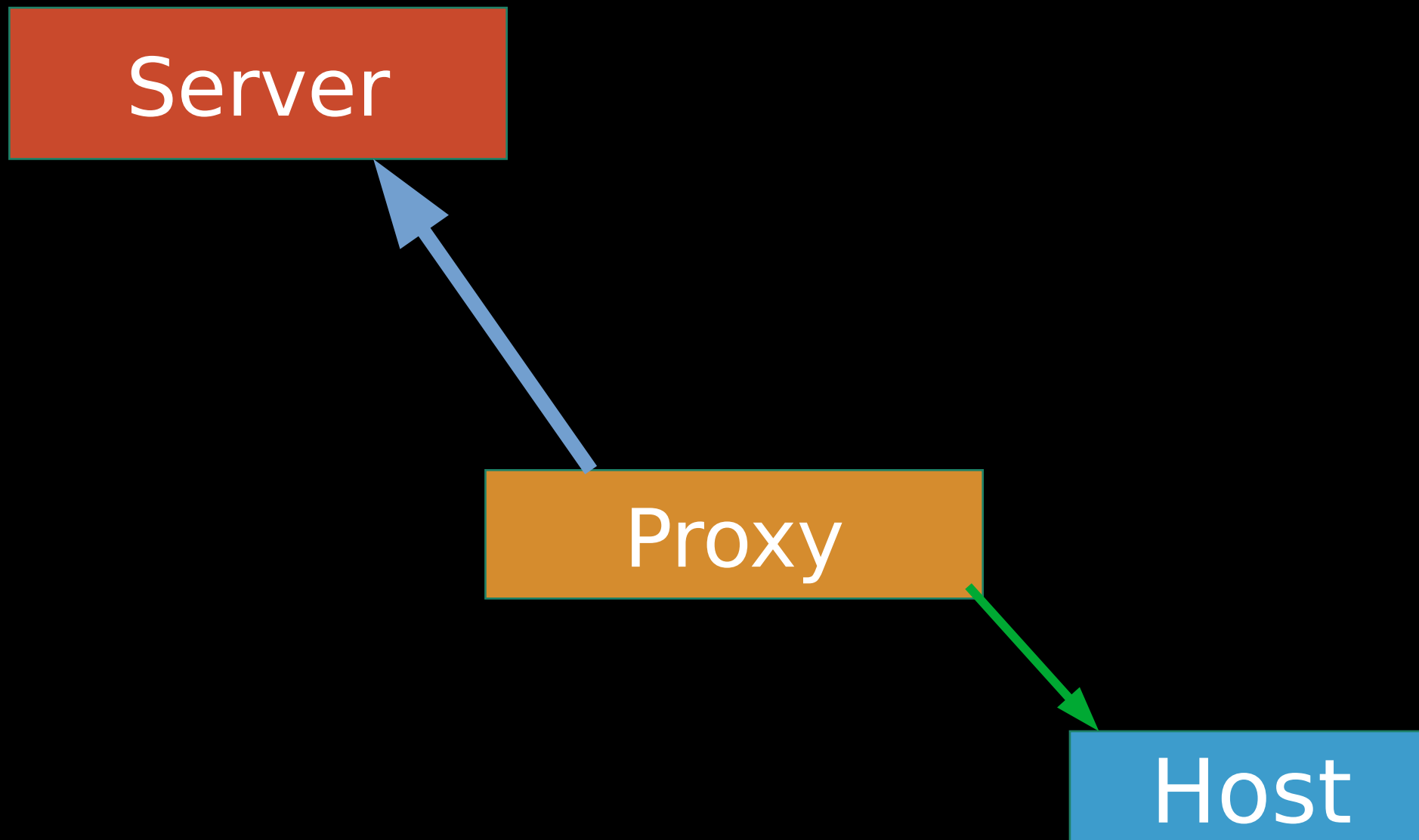
Proxy

Host

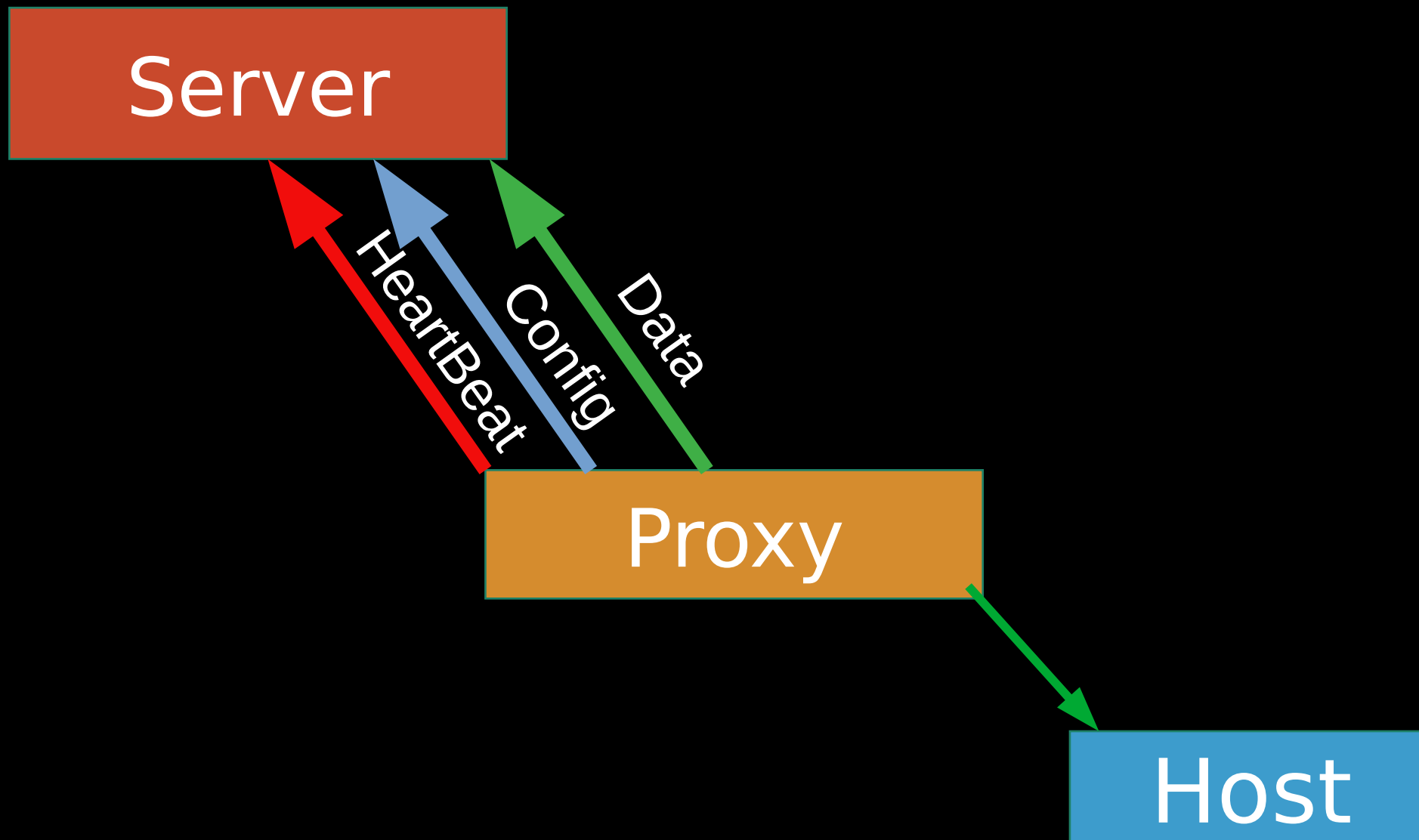
```
graph TD; Server[Server]; Proxy[Proxy]; Host[Host]; Proxy --> Host;
```

The diagram illustrates an active proxy architecture. It consists of three main components: a Server (represented by a red box), a Proxy (represented by an orange box), and a Host (represented by a blue box). The Proxy is positioned between the Server and the Host. A green arrow points from the Proxy to the Host, indicating the flow of traffic or data. The Server is located at the top left, the Proxy is in the middle, and the Host is at the bottom right.

Прокси: Активные



Прокси: Активные



Прокси

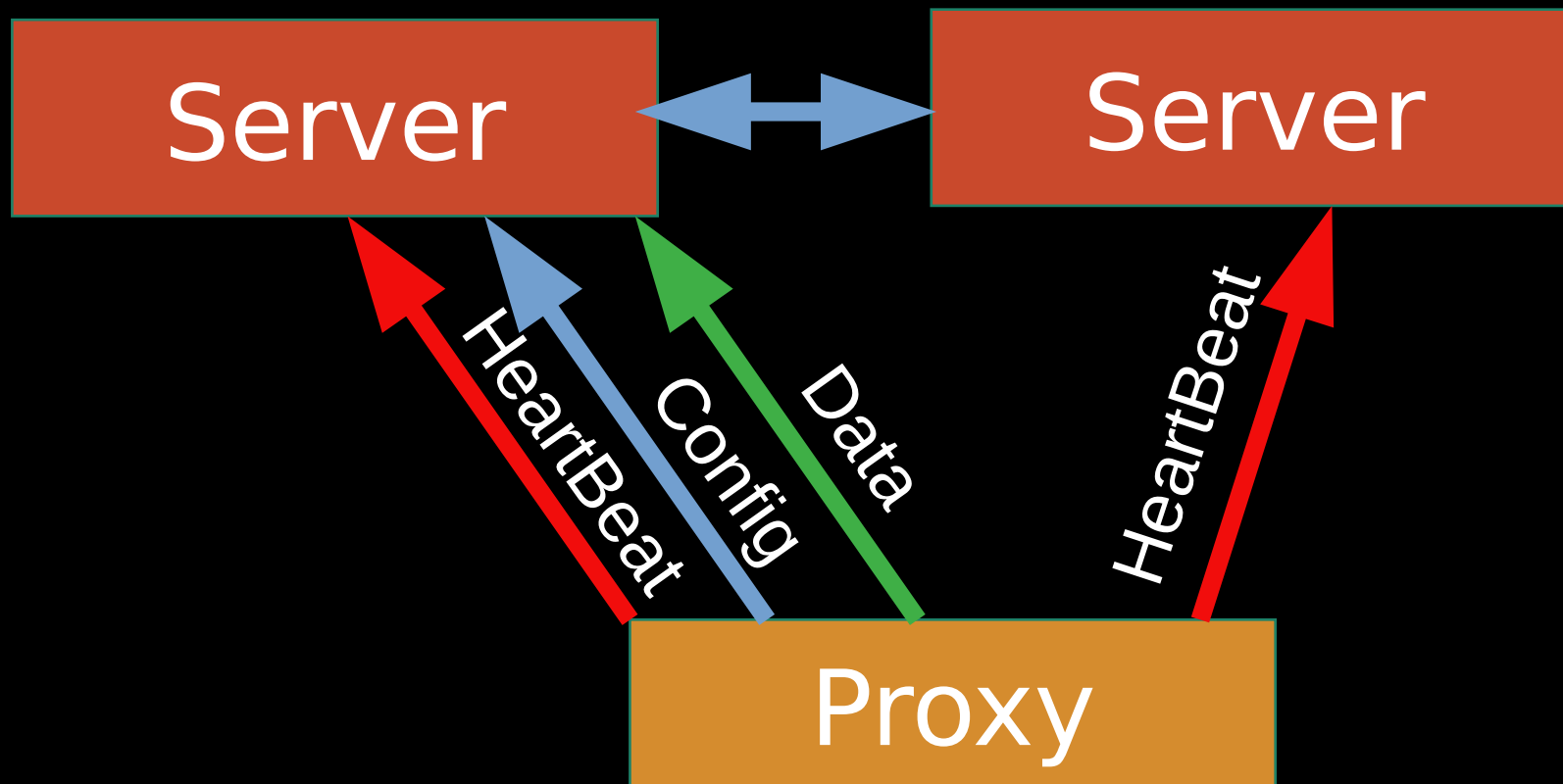
Server = server1.ru

Прокси

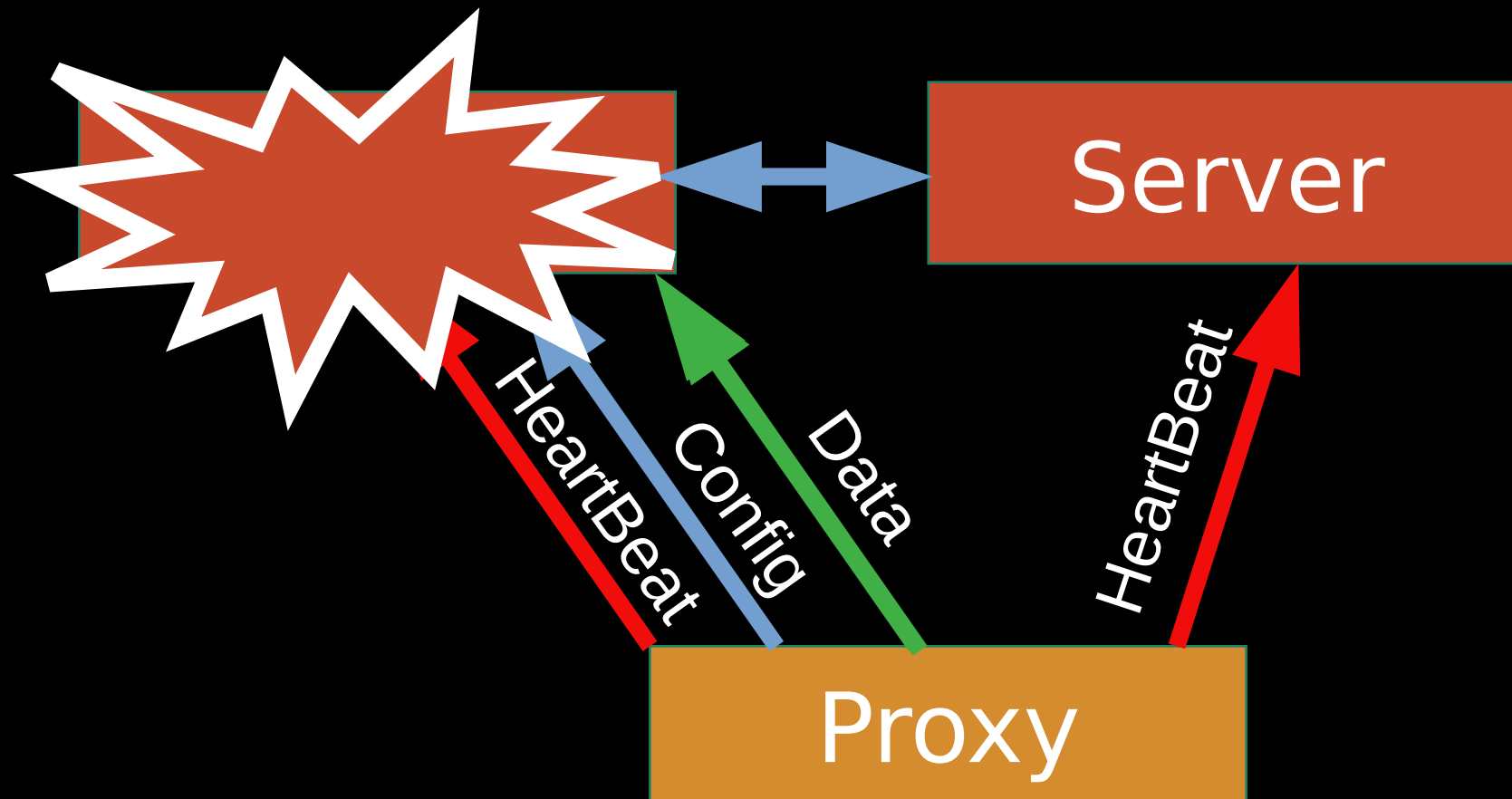
~~Server = server1.ru~~

Servers = server1.ru;server2.ru;....

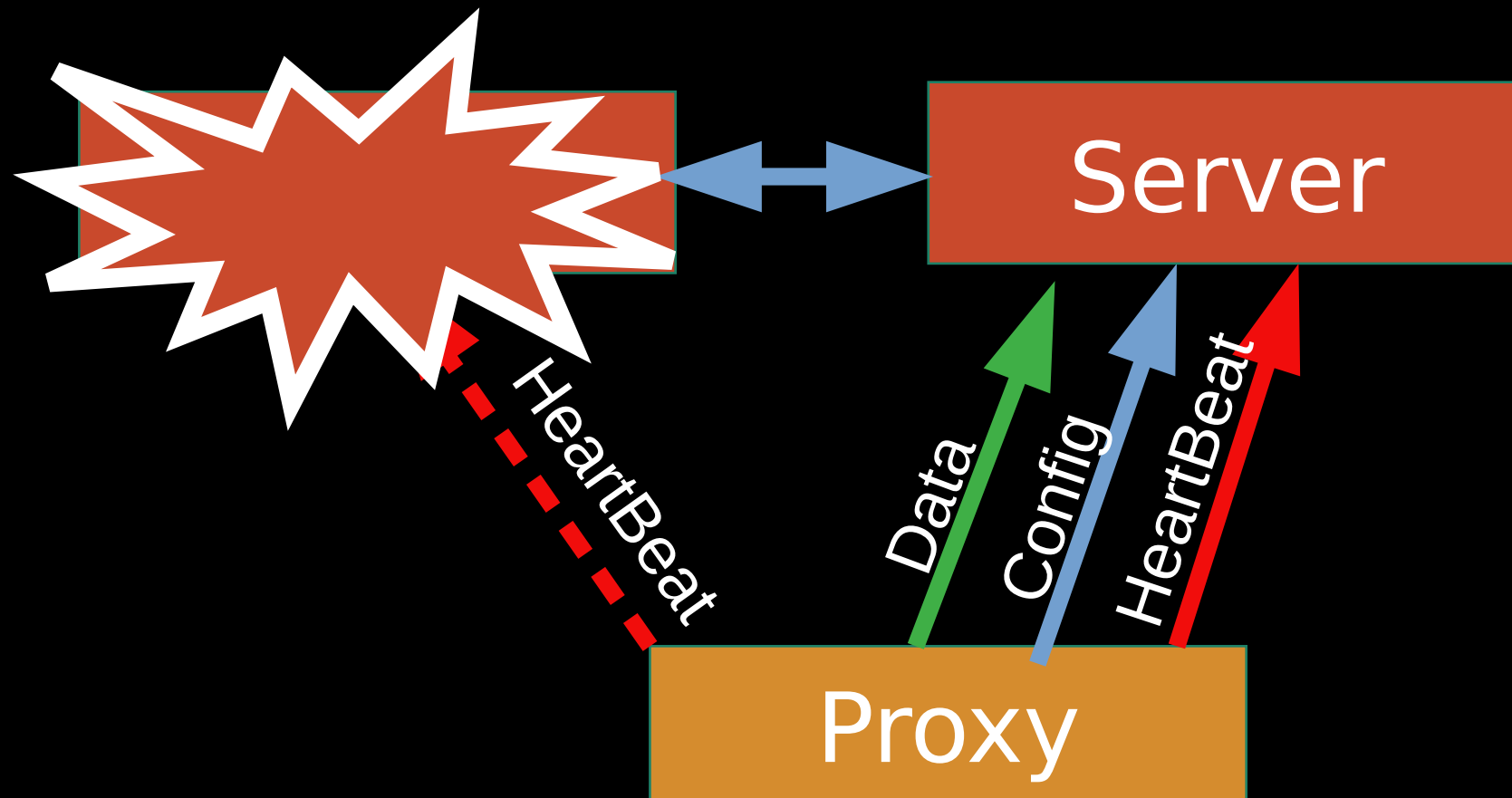
Прокси: Активные



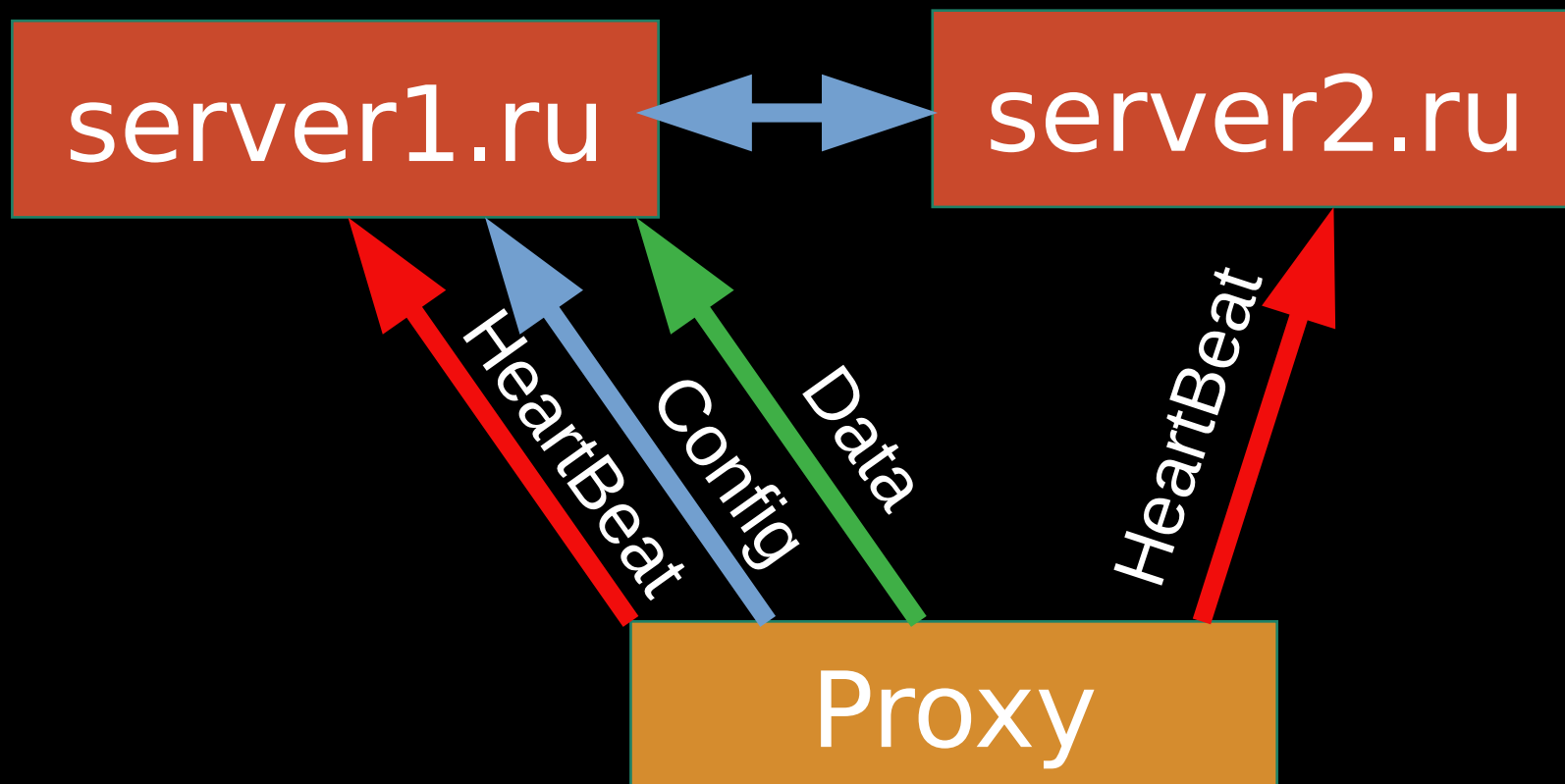
Прокси: Активные



Прокси: Активные



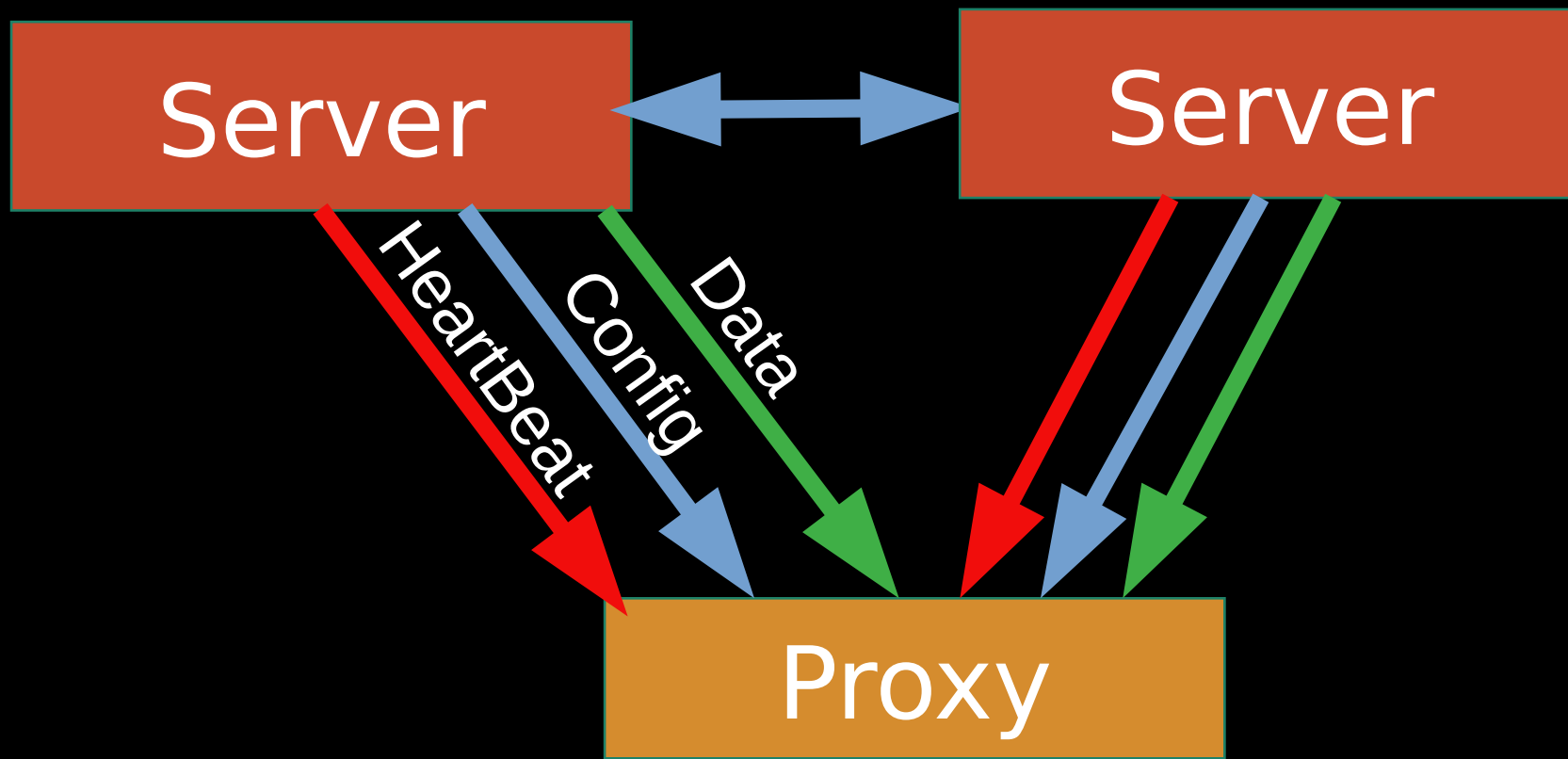
Прокси: Активные



Servers = server1.ru;server2.ru;....

Прокси: Passive

Прокси: Passive



Tooling

Tooling: logs

```
97:20190823:100927.038 CLUSTER: Starting topology recalc
97:20190823:100927.038 CLUSTER: Couldn't find a server with higher topology, i am a master, gen
97:20190823:100927.038 CLUSTER: Generating new own topology
97:20190823:100927.038 CLUSTER: DOMAIN_DUMP: found domain 154409 'Chel area'
97:20190823:100927.038 CLUSTER: DOMAIN_DUMP: found domain 154370 'default'
97:20190823:100927.038 CLUSTER:
97:20190823:100927.038 CLUSTER: active server#0 154404
97:20190823:100927.038 CLUSTER: active server#1 154403
97:20190823:100927.038 CLUSTER: DOMAIN_DUMP: found domain 154407 'Moscow area'
97:20190823:100927.038 CLUSTER: SERVER_DUMP: server 154404 'test_server2.is74.ru' in state 1
97:20190823:100927.038 CLUSTER: connected proxy#0 154406
97:20190823:100927.038 CLUSTER: SERVER_DUMP: server 154403 'test_server1.is74.ru' in state 1
97:20190823:100927.038 CLUSTER: connected proxy#0 154405
97:20190823:100927.038 CLUSTER: connected proxy#1 154406
97:20190823:100927.038 CLUSTER: PROXY_DUMP: proxy 154405 'test_proxy1' in state 0
97:20190823:100927.038 CLUSTER: connected server#0 154403
97:20190823:100927.038 CLUSTER: PROXY_DUMP: proxy 154406 'test_passive_proxy2' in state 0
97:20190823:100927.038 CLUSTER: connected server#0 154404
97:20190823:100927.038 CLUSTER: connected server#1 154403
```

Tooling: logs

```
97:20190823:100927.038 CLUSTER: Starting topology recalc
97:20190823:100927.038 CLUSTER: Couldn't find a server with higher topology. i am a master, gen
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97:20190823:100927.038 CLUSTER: DOMAIN_DUMP: found domain 154370 'default'
97:20190823:100927.038 CLUSTER:
97:20190823:100927.038 CLUSTER:         active server#0 154404
97:20190823:100927.038 CLUSTER:         active server#1 154403
97:20190823:100927.038 CLUSTER: DOMAIN_DUMP: found domain 154407 'Moscow area'
97:20190823:100927.038 CLUSTER: SERVER_DUMP: server 154404 'test_server2.is74.ru' in state 1
97:20190823:100927.038 CLUSTER:         connected proxy#0 154406
97:20190823:100927.038 CLUSTER: SERVER_DUMP: server 154403 'test_server1.is74.ru' in state 1
97:20190823:100927.038 CLUSTER:         connected proxy#0 154405
97:20190823:100927.038 CLUSTER:         connected proxy#1 154406
97:20190823:100927.038 CLUSTER: PROXY_DUMP: proxy 154405 'test_proxy1' in state 0
97:20190823:100927.038 CLUSTER:         connected server#0 154403
97:20190823:100927.038 CLUSTER: PROXY_DUMP: proxy 154406 'test_passive_proxy2' in state 0
97:20190823:100927.038 CLUSTER:         connected server#0 154404
97:20190823:100927.038 CLUSTER:         connected server#1 154403
```

Tooling: UI



2 servers are running out of 3

Tooling: UI

Dashboard Problems Overview Web Latest data Graphs Screens

Servers state

unreachable_server

DOWN (NO DATA)

test_server1.is74.ru

topology version: 81566538452

OK

active servers

test_server1.is74.ru (793 hosts active)

test_server2.is74.ru (752 hosts active)

test_server2.is74.ru

topology version: 81566537648

OK

active servers

test_server1.is74.ru (793 hosts active)

test_server2.is74.ru (752 hosts active)

Dashboard Problems Overview Web Latest data Graphs Screens

Servers state

unreachable_server

DOWN (NO DATA)

test_server1.is74.ru

topology version: 81566538280

OK

active servers

test_server1.is74.ru (793 hosts active)

Hosts in the server

154200, 145796, 97874, 153918, 90740, 17674, 144846, 154110, 154020, 146534, 14
153874, 144830, 145622, 153938, 143378, 153966, 149020, 153984, 27680, 145898,
153168, 146432, 150702, 144858, 148256, 64186, 154276, 152624, 149890, 154010,
144608, 146128, 154096, 145474, 154270, 151924, 154024, 152238, 154178, 152542
144880, 81464, 146054, 150064, 154064, 154230, 148172, 26442, 154072, 35476, 14
154208, 144860, 154344, 154362, 154142, 147178, 86126, 144932, 154226, 153486,
149232, 154150, 147406, 154306, 147140, 145886, 153982, 153484, 149984, 144814
115164, 146682, 126164, 154234, 108398, 150368, 148636, 153924, 154286, 154086
150214, 92734, 97632, 34996, 90000, 154174, 145892, 27486, 150324, 153936, 1540
145876, 153998, 146208, 146152, 144892, 147798, 144918, 126172, 147974, 144758

Резюме

Подумайте о

- распределении в кластере

Резюме

Подумайте о

- распределении в кластере
- split brain

Резюме

Подумайте о

- распределении в кластере
- split brain
- point of view

Резюме

Нужно уже сейчас ?

Резюме

Нужно уже сейчас ?

<https://gitlab.com/mikler/glaber/>

Спасибо

Telegram: @makurov

makurov@gmail.com

<https://gitlab.com/mikler/glaber/>