

Horizontally



Scaling

SIP2SIP.info

Saúl Ibarra Corretgé (@saghul)
AG Projects

AG Projects

Blink

SylkServer

MediaProxy

CDRTool

SIP2SIP

Audio / Video

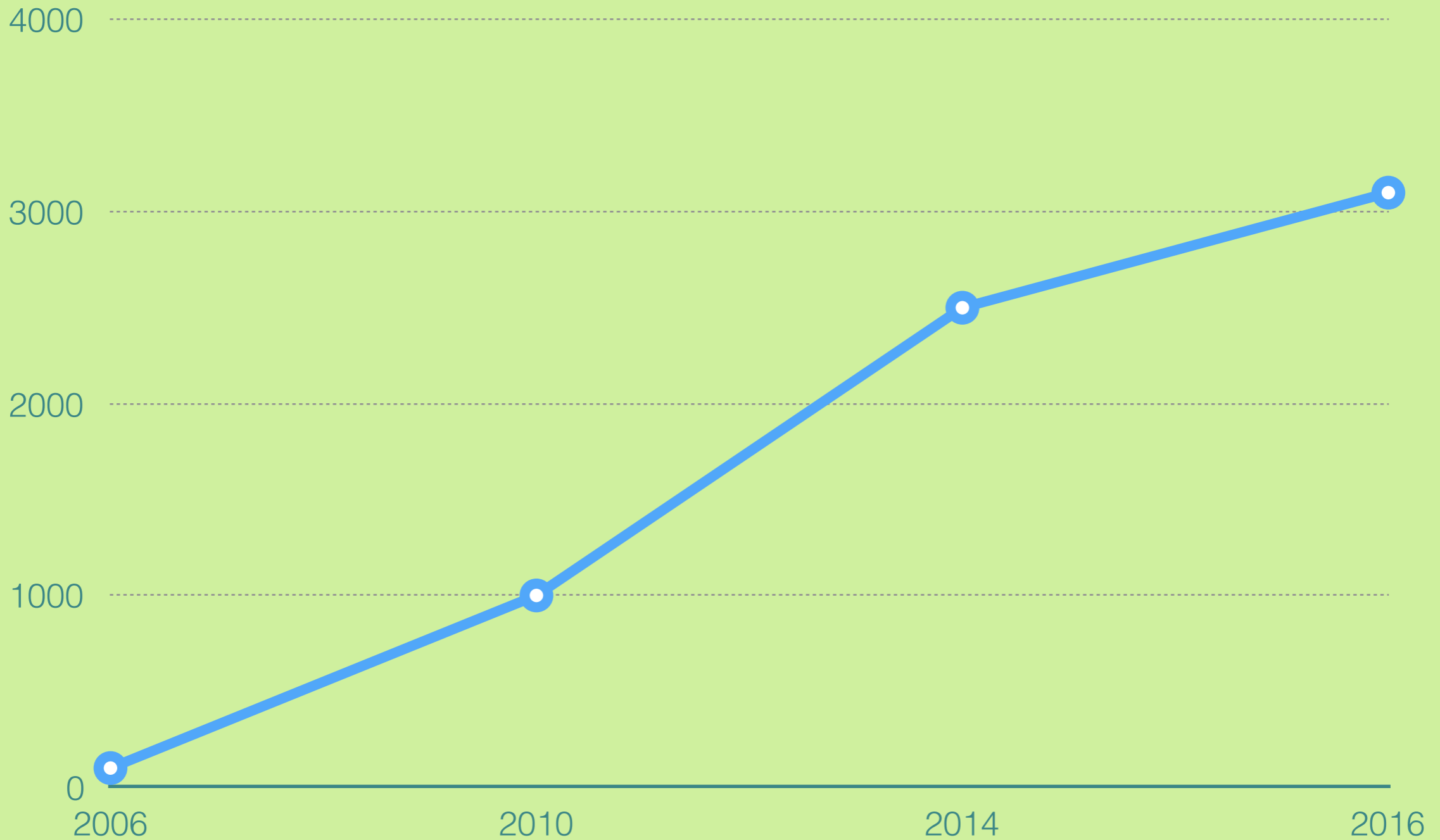
Chat

Presence

XCAP



Active SIP accounts/month

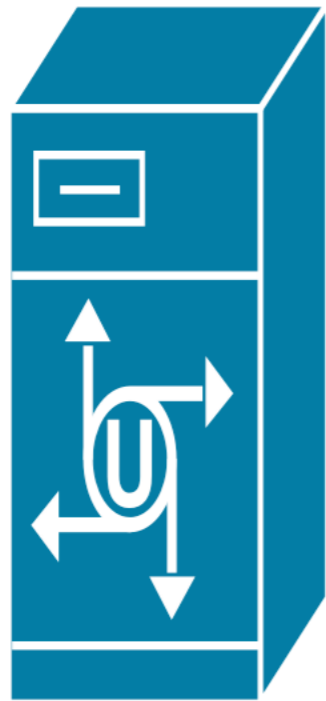


SCALABILITY

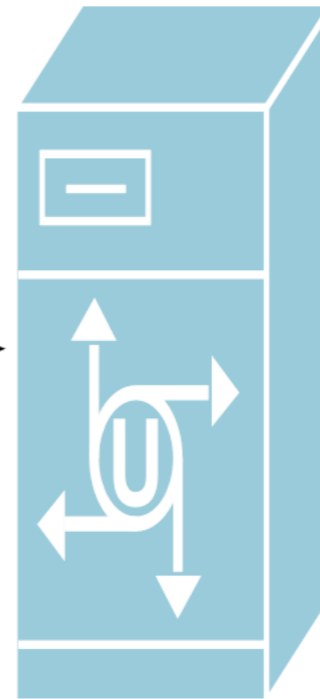
A close-up illustration of Vegeta's face from the anime Dragon Ball Z. He is wearing his signature red visor with yellow markings. His eyes are wide and intense, looking slightly to the right. The background is a soft, out-of-focus landscape with green hills and a purple sky.

Over 90000 reqs/sec!

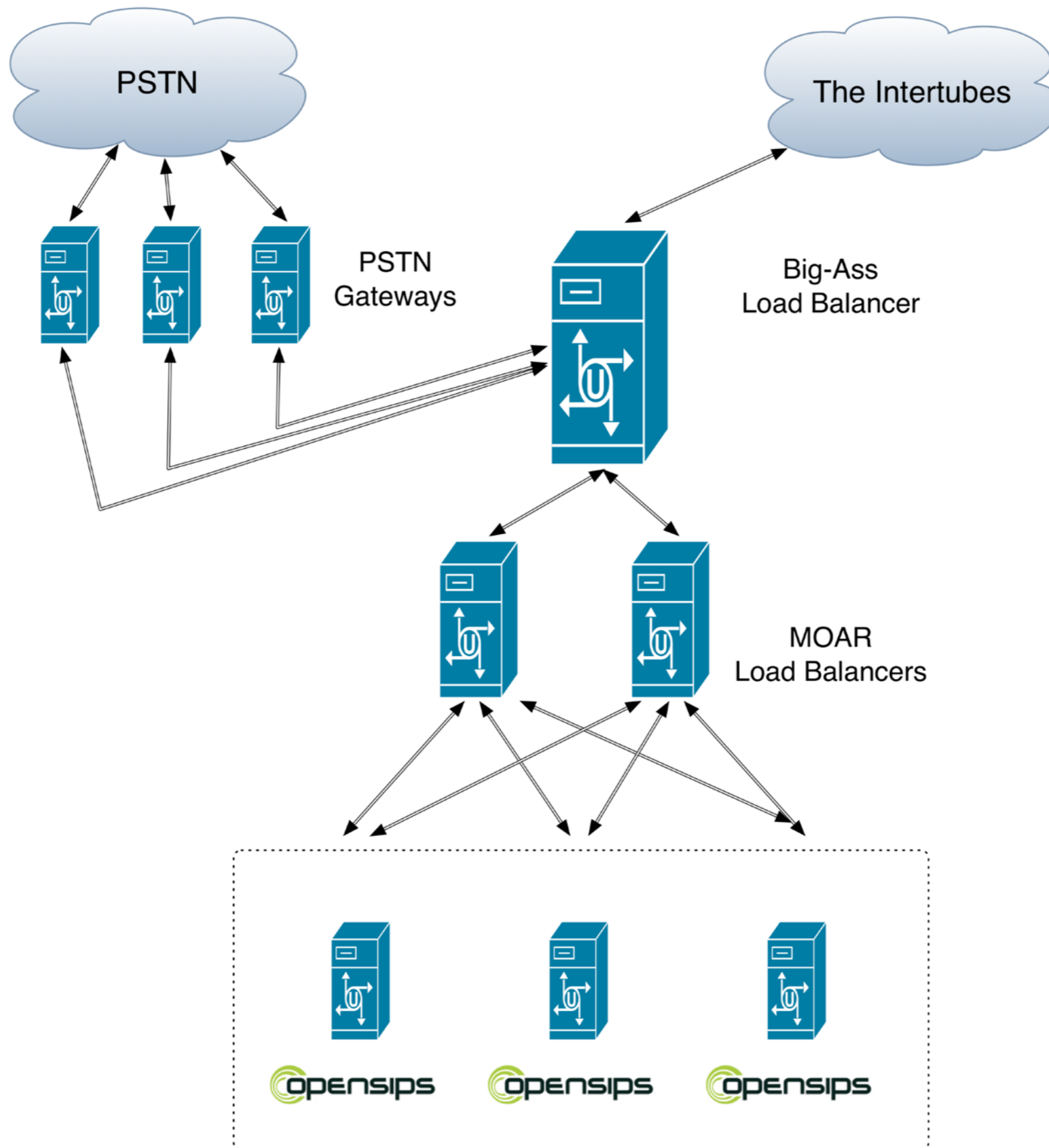
SIP cluster

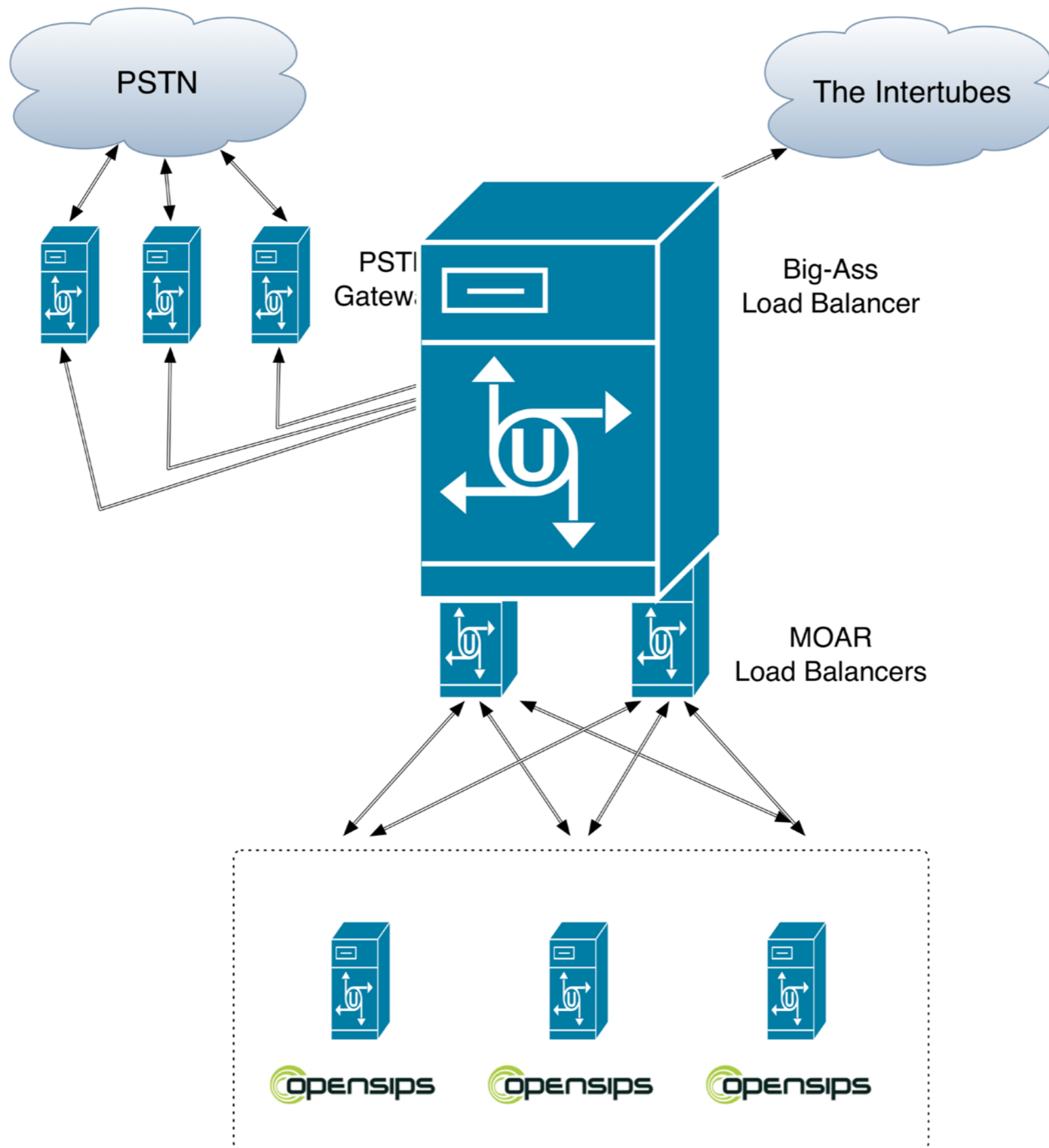


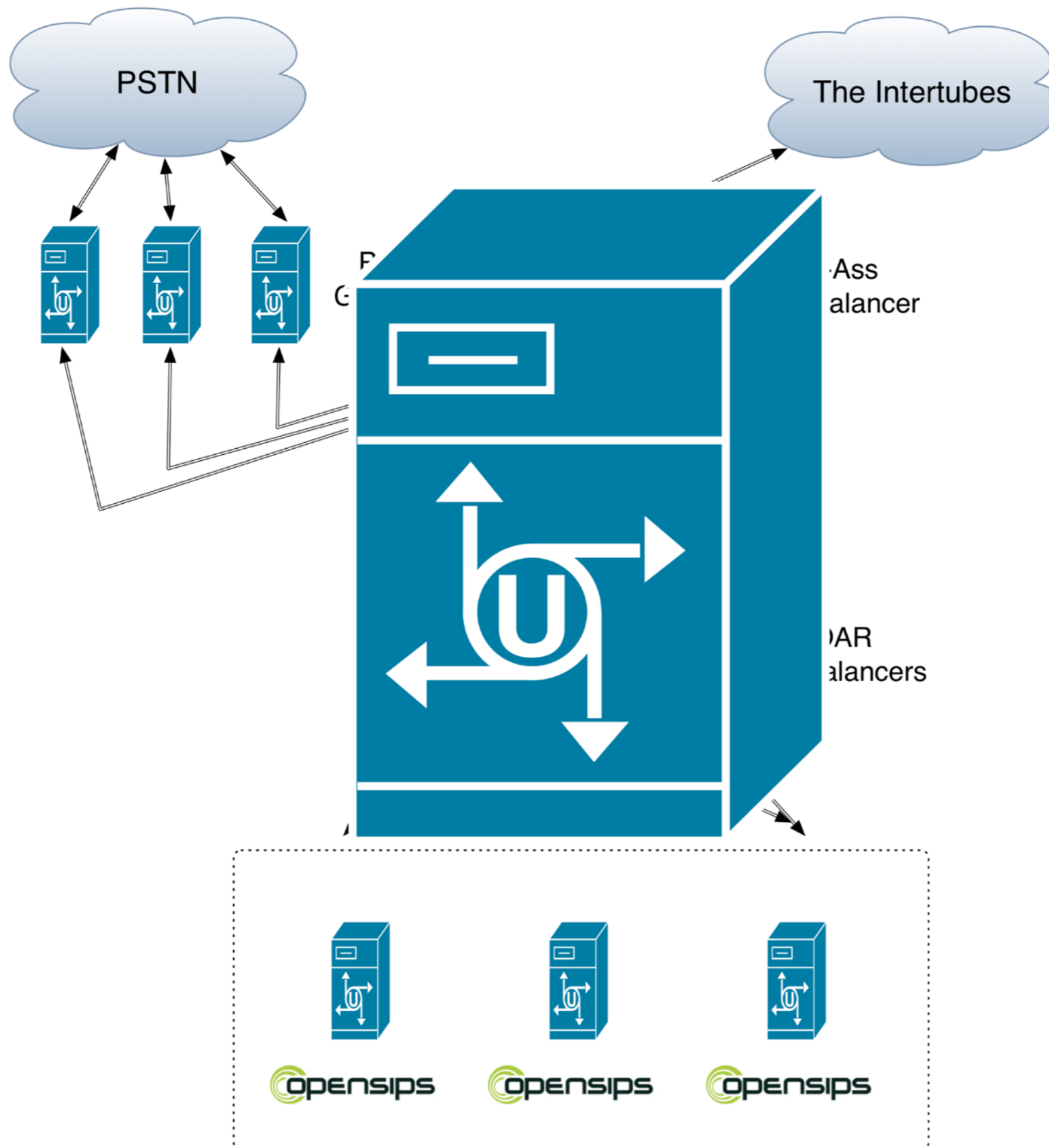
Master
Proxy

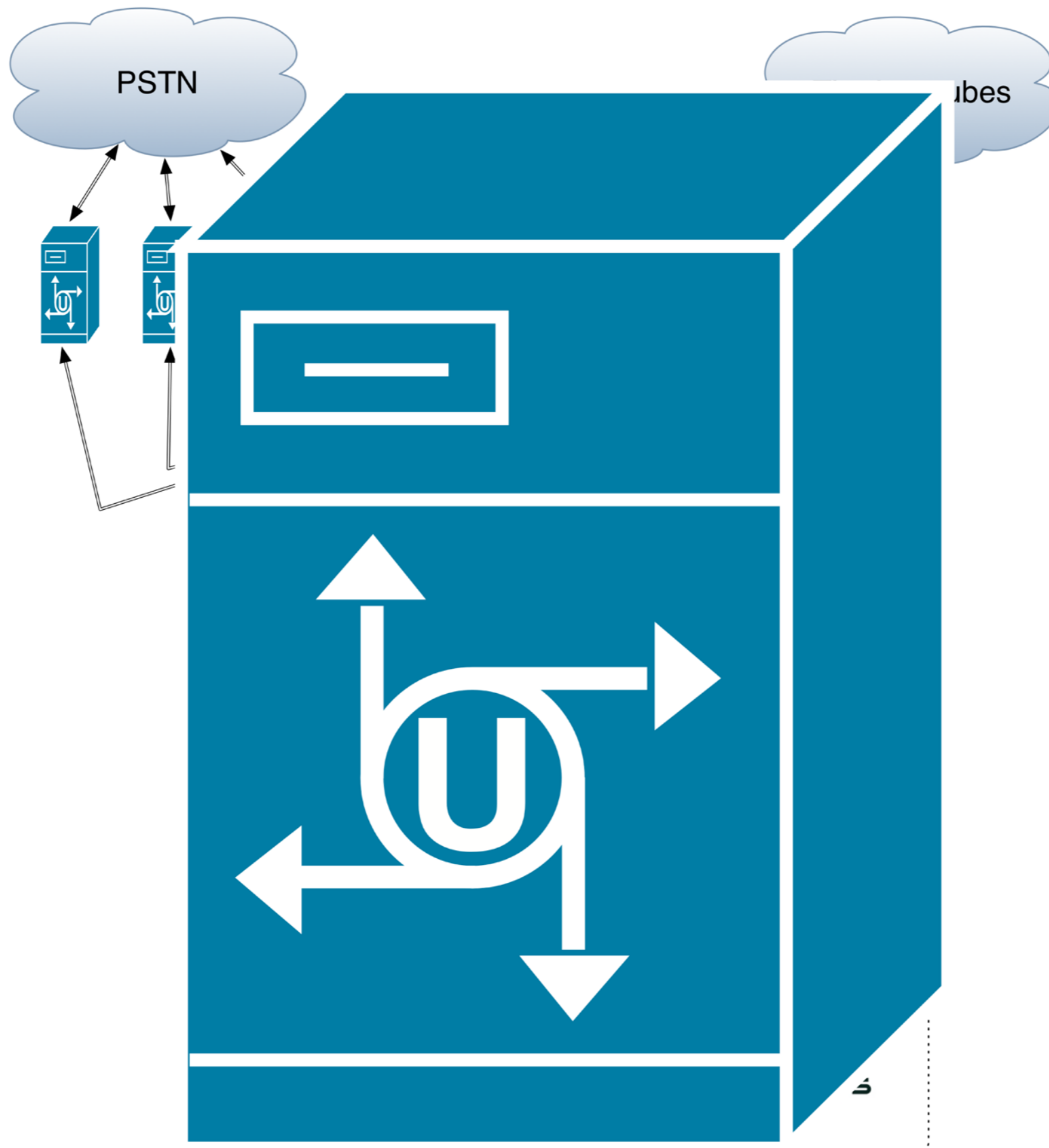


Slave
Proxy









Requests per second
Tickets per day
Steaks per week
Conferences per year



Resiliency

Fault tolerance



Maintenance

Downtime

SIPThor

Distributed

Horizontally scalable

Self-Organizing

P2P

Network Overlay

SIP Thor

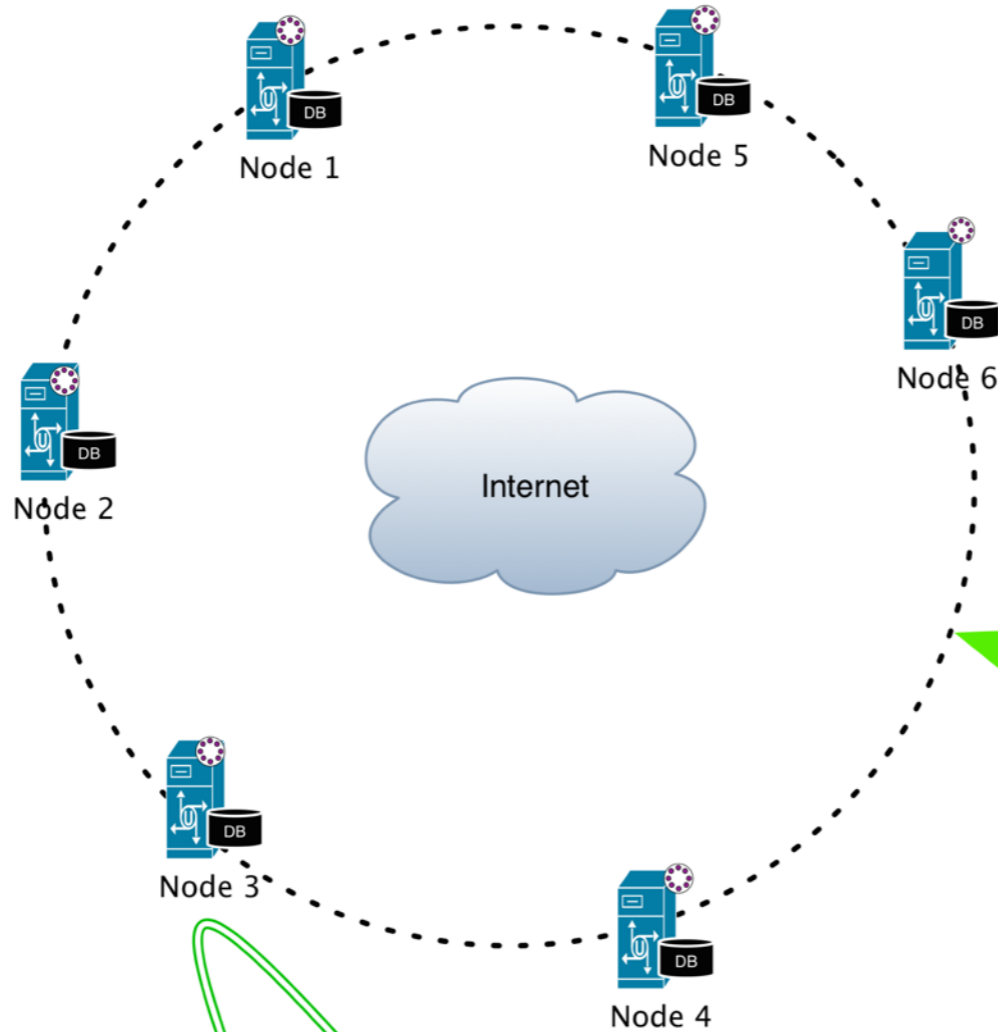
Self-organizing SIP Infrastructure

Self-organizing

- Horizontally scalable
- Built-in disaster recovery
- No single point of failure
- Maintenance free

Multiple Roles

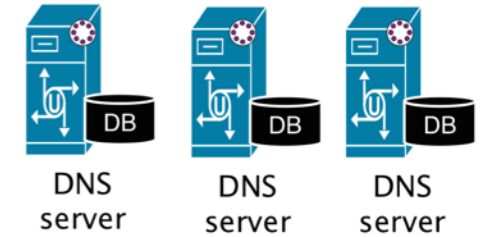
- SIP Proxy/Registrar
- RTP Media relay
- Presence Agent
- XCAP server
- Voicemail server
- Rating server
- Provisioning server
- WebRTC gateway
- XMPP gateway



Self-provisioned DNS

Dynamic updates

```
_sip_udp.example.com 0 1 proxy1
_sip_udp.example.com 0 1 proxy2
_sip_udp.example.com 0 1 proxy3
_sip_udp.example.com 0 1 proxy4
_sip_udp.example.com 0 1 proxy5
_sip_udp.example.com 0 1 proxy6
_sip_udp.example.com 0 1 proxy7
```



Bootstrap

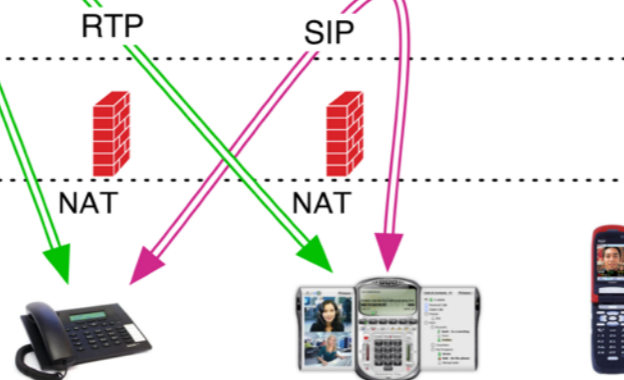


New nodes are provisioned with a valid TLS certificate to be accepted by the network

All nodes are in active mode, can be distributed in multiple datacenters and any of them can handle requests from any subscriber

SIP User Agents

User agents need only RFC3263 support (locating SIP services using DNS lookups)



DNS lookup

DNS

```
2. bash
$ dig NAPTR sip2sip.info

; <<>> DiG 9.8.3-P1 <<>> NAPTR sip2sip.info
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 13130
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;sip2sip.info.                IN          NAPTR

;; ANSWER SECTION:
sip2sip.info.                3565       IN          NAPTR      10 100 "s" "SIP+D2T" "" _sip._tcp.sip2sip.info.
sip2sip.info.                3565       IN          NAPTR      30 100 "s" "SIP+D2U" "" _sip._udp.sip2sip.info.
sip2sip.info.                3565       IN          NAPTR      5 100 "s" "SIPS+D2T" "" _sips._tcp.sip2sip.info.

;; Query time: 25 msec
;; SERVER: 8.8.8.8#53(8.8.8.8)
;; WHEN: Tue May 10 00:33:23 2016
;; MSG SIZE rcvd: 185

saghul@echo ~
$
```

saghul@echo ~

\$ dig SRV _sips._tcp.sip2sip.info

```
; <<>> DiG 9.8.3-P1 <<>> SRV _sips._tcp.sip2sip.info
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 64689
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
_sips._tcp.sip2sip.info.      IN      SRV

;; ANSWER SECTION:
_sips._tcp.sip2sip.info. 2677  IN      SRV      100 100 443 proxy.sipthor.net.

;; Query time: 19 msec
;; SERVER: 8.8.8.8#53(8.8.8.8)
;; WHEN: Tue May 10 00:36:17 2016
;; MSG SIZE rcvd: 78
```

saghul@echo ~

\$

```
$ dig A proxy.siphthor.net
```

```
; <<>> DiG 9.8.3-P1 <<>> A proxy.siphthor.net
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 4863
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;proxy.siphthor.net.          IN      A

;; ANSWER SECTION:
proxy.siphthor.net.         15      IN      A      85.17.186.7
proxy.siphthor.net.         15      IN      A      81.23.228.150
proxy.siphthor.net.         15      IN      A      81.23.228.129

;; Query time: 16 msec
;; SERVER: 8.8.8.8#53(8.8.8.8)
;; WHEN: Tue May 10 00:38:25 2016
;; MSG SIZE rcvd: 83
```

```
saghul@echo ~
```

```
$
```



SIP Thor

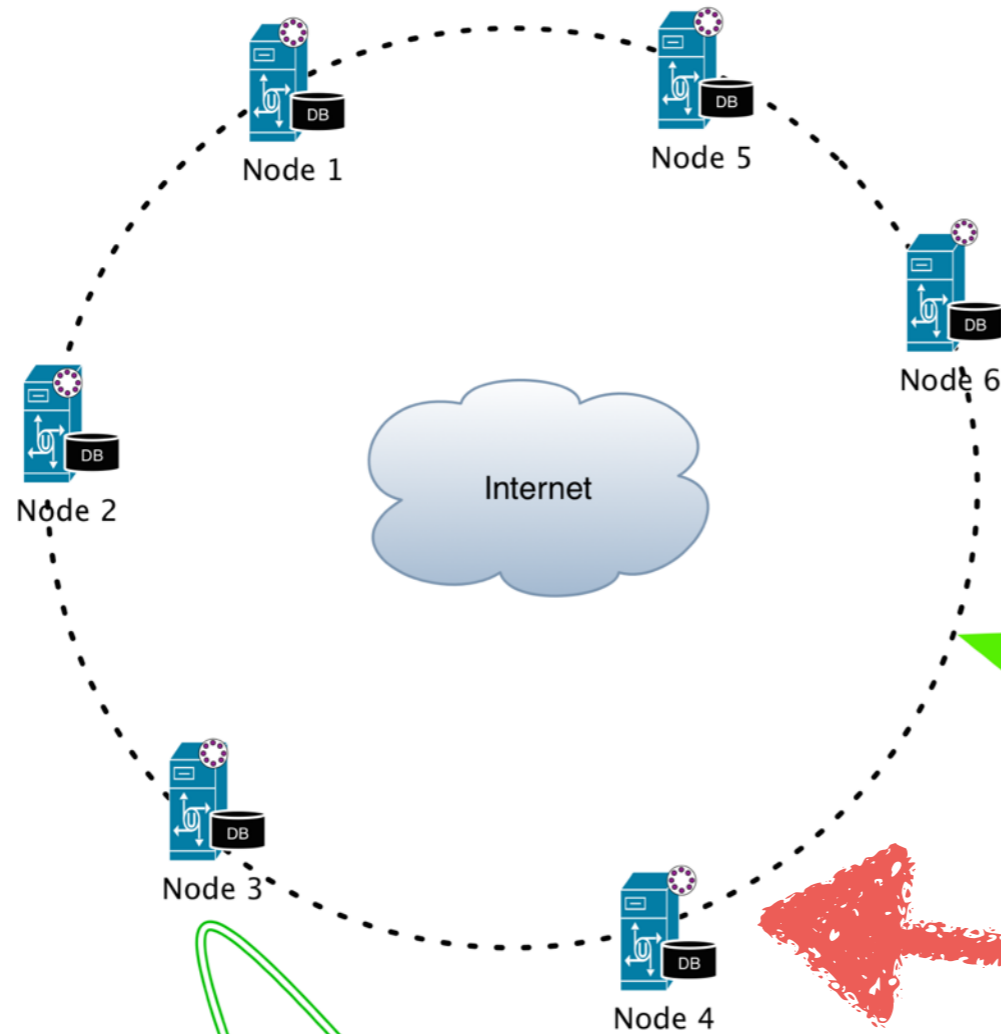
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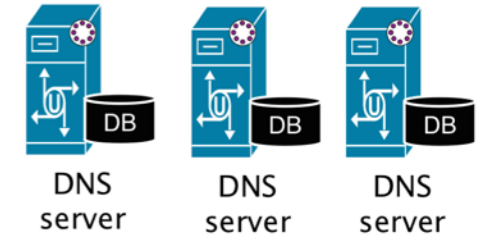
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```



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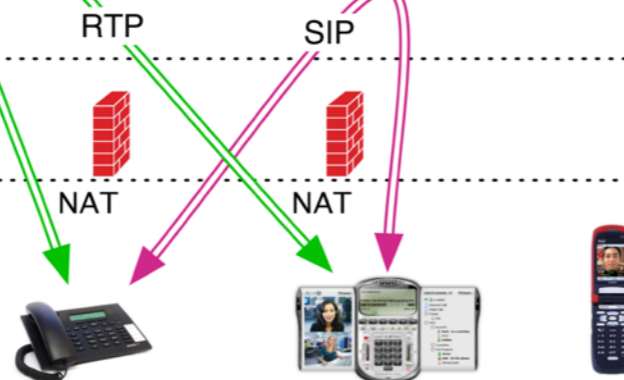
Node 7

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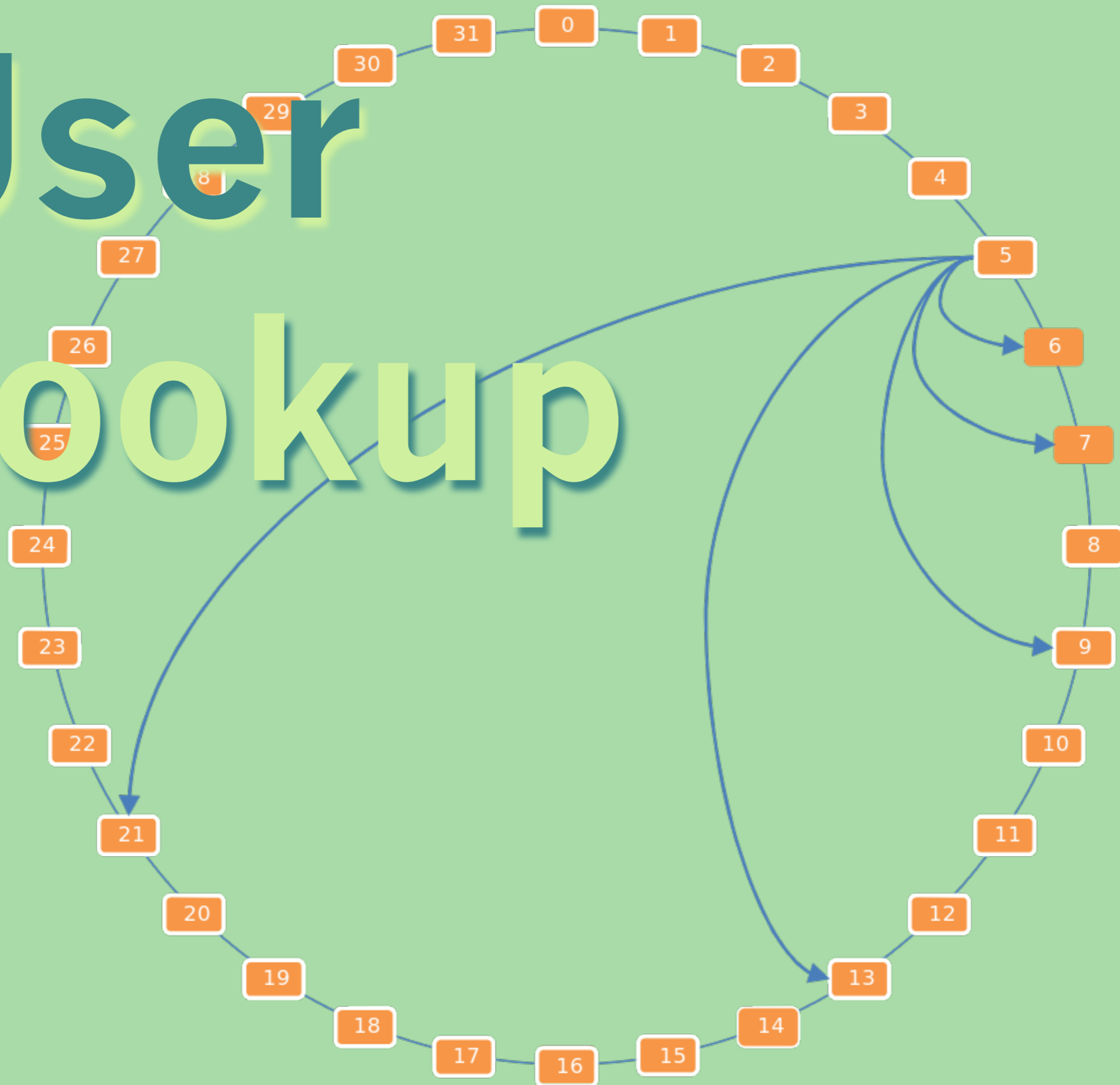
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User

Lookup



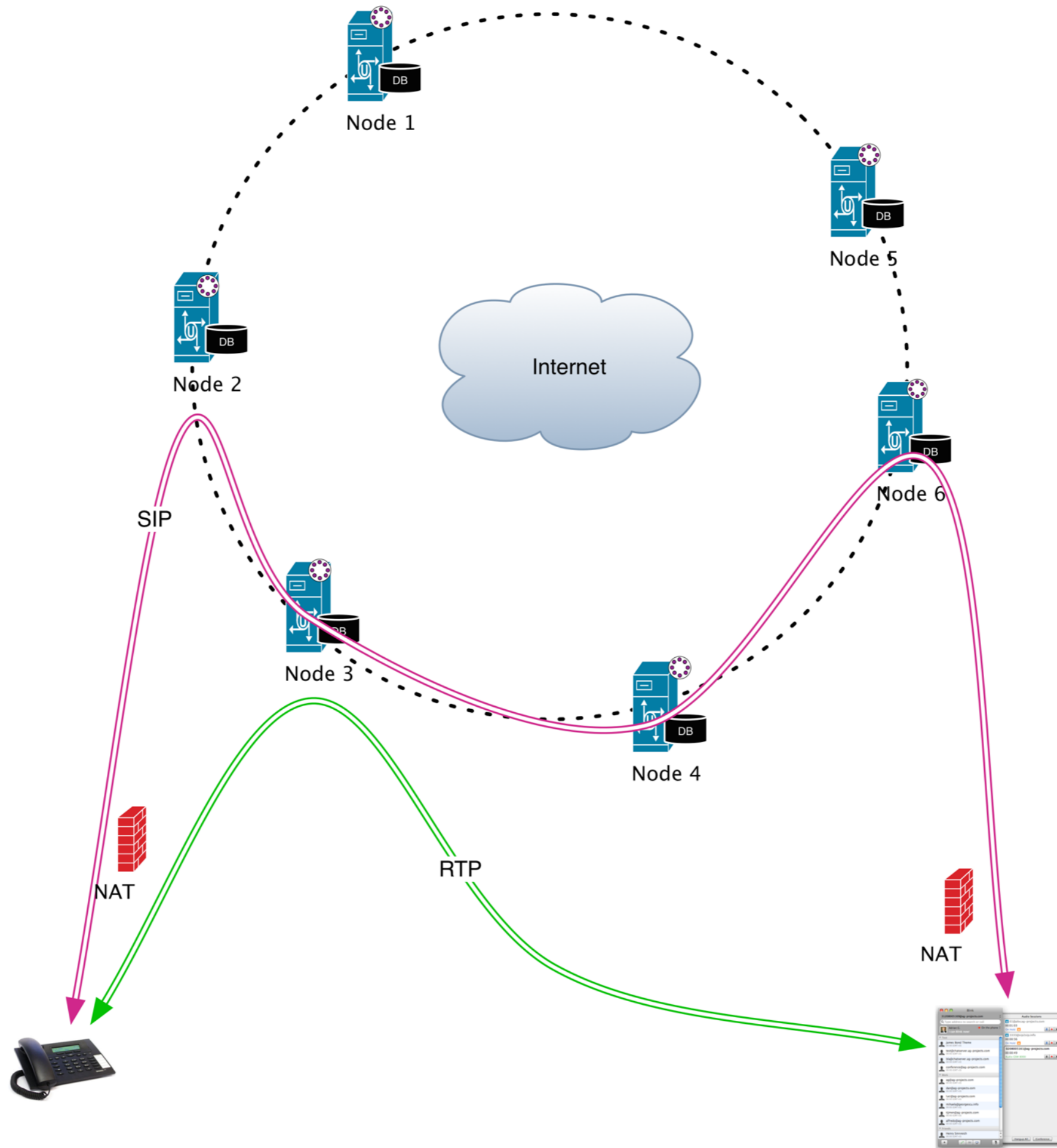
saghul@sip2sip.info



DHT_lookup(resource)



Node X



CHALLENGES



Distributed storage

Accounting

Registration expiring

Scalability problems?



bettercallsaghol.com

AG Projects

ag-projects.com