

# **Implementacja i testy skalowalności systemu wideokonferencyjnego**

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**Jakub Jędrzejczyk**  
**Berkowska**

**Sebastian Kwaśniak**

**Anna**

Wdrożenie Jitsi

# Konfiguracja Jitsi

jitsi-values.yaml

```
1  publicURL: "jitsi.google.sex.pl"
2
3  jvb:
4    useHostPort: true
5    stunServers: 'turn:158.101.210.198:3478?transport=tcp,turn:158.101.210.198:3478?transport=udp'
6    publicIPs:
7      - '158.101.210.198'
8    service:
9      enabled: true
10     type: ClusterIP
11     externalTrafficPolicy: ""
12
13  prosody:
14    transcriber:
15      enabled: false
16    extraEnvFrom:
17      - secretRef:
18        name: jitsi-turn-secret
19
20  web:
21    extraEnvFrom:
22      - secretRef:
23        name: jitsi-turn-secret
```

# Uruchomienie Jitsi

```
turn-secret.yaml
1  apiVersion: v1
2  kind: Secret
3  metadata:
4    name: jitsi-turn-secret
5  type: Opaque
6  stringData:
7    TURN_CREDENTIALS: "abcdefghijklmnopqrstuvwxyz012345"
8    TURN_HOST: "158.101.210.198"
9    TURN_PORT: "3478"

1  # postawienie samego jitsi
2
3  kubectl apply -f turn-secret.yaml
4  helm install myjitsi jitsi/jitsi-meet --values values.yaml
```

Udostępnienie Jitsi bez publicznego adresu IP

# Pangolin - Tworzenie zdalnego dostępu

Organization  
main

Server Admin

GENERAL

Sites

Resources

Clients Beta

Domains

ACCESS CONTROL

Users

Roles

Invitations

Shareable Links

ORGANIZATION

API Keys

Settings

Buy Supporter Key

Community Edition

v1.1.1 id

PANGOLIN

Dark D

Create Site

Follow the steps below to create and connect a new site

See All Sites

Site Information

Name

Kls

Site Address

100.90.128.4

Specify the IP address of the host for clients to connect to. This is the internal address of the site in the Pangolin network for clients to address. Must fall within the Org subnet.

Tunnel Type

Determine how you want to connect to your site

Newt Tunnel (Recommended)  
Easiest way to create an endpoint into your network. No extra setup.

Basic WireGuard  
Use any WireGuard client to establish a tunnel. Manual NAT setup required.

Local  
Local resources only. No tunneling.

Newt Credentials

This is how Newt will authenticate with the server

Newt Endpoint  
https://pangolin.google.sex.pl

Newt ID  
abcdelghjklmnop

Newt Secret Key  
abcdelghjklmnopqrstuvwxyz0123456789abcdelghjkl

Save Your Credentials

You will only be able to see this once. Make sure to copy it to a secure place.

Install Newt

# Pangolin - Uruchomienie zdalnego dostępu

newt-cred.env

```
1 PANGOLIN_ENDPOINT=https://pangolin.google.sex.pl
2 NEWT_ID=abcdefghijklmnp
3 NEWT_SECRET=abcdefghijklmnpqrstuvwxyz0123456789abcdefghijklmn
4
```

values-newt.yaml

```
1 newtInstances:
2   - name: main
3     enabled: true
4     auth:
5       existingSecretName: newt-cred
6       keys:
7         endpointKey: PANGOLIN_ENDPOINT
8         idKey: NEWT_ID
9         secretKey: NEWT_SECRET
```

```
6 # dodanie repo
```

```
7
```

```
8 helm repo add fossorial https://charts.fossorial.io
```

# Pangolin - Zdalny Dostęp

## Manage Sites

Allow connectivity to your network through secure tunnels

[Refresh](#)[+ Add Site](#)

Name ↕	Online ↕	Site ↕	Data In ↕	Data Out ↕	Connection Type ↕	Exit Node ↕	Address ↕	
Local	● Online	lorem-ipsum-dolor	21.37 GB	21.37 GB	Newt	Exit Node /1f9o+o2	1.2.3.4	... <a href="#">Edit</a> →
Local-No-Newt	-	sit-amet-consectetur	-	-	Local	-	5.6.7.8	... <a href="#">Edit</a> →
K8s	● Online	adipiscing-elit-donec	21.37 GB	21.37 GB	Newt v1.5.0 ⓘ	Exit Node /1f9o+o2	9.10.11.12	... <a href="#">Edit</a> →
TrueNAS	● Online	blandit-turpis-nulla	21.37 GB	21.37 GB	Newt v1.5.2 ⓘ	Exit Node /1f9o+o2	13.14.15.16	... <a href="#">Edit</a> →

[20](#) ▾

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# Pangolin - Tworzenie Zasobu

## Create Resource

[See All Resources](#)

Follow the steps below to create a new resource

### Resource Information

Name

This is the display name for the resource.

### Resource Type

Determine how you want to access your resource

☒ **HTTPS Resource**

Proxy requests to your app over HTTPS using a subdomain or base domain.

☐ **Raw TCP/UDP Resource**

Proxy requests to your app over TCP/UDP using a port number. This only works when sites are connected to nodes.

### HTTPS Settings

Configure how your resource will be accessed over HTTPS

Subdomain

Base Domain

### Targets Configuration

Set up targets to route traffic to your backend services

Address

Health Check

Enabled

TrueNAS

http

://

myjitsi-jitsi-meet-web.default.svc.cluster.local

: 80

Unknown



Delete

# Pangolin - SSL + Wyłączenie SSO


## Jitsi Settings

Configure the settings on your resource

### Authentication

 Not Protected

### URL

https://jitsi.google.sex.pl 

### Visibility

Enabled

General

Proxy

**Authentication**

Rules

## Users & Roles

Configure which users and roles can visit this resource

☒ Use Platform SSO

Save Users & Roles



PANGOLIN

Set up targets to route traffic to your backend services

Address

MH-K8s



http



://

myjitsi-jitsi-meet-web.default.svc.cluster.local

:

80

+ Add Target

## Additional Proxy Settings

Configure how your resource handles proxy settings


# Tailscale - Czemu wyłączyć SSO?

Auth - Pangolin x +

< > ↺ pangolin.google.sex.pl/auth/login 🔒 | 🏠 📄 🗨️ ☰

🔊 PG 🌐 Dokumentacja 🧑‍🔬 CIVI 📖 Scholar 🌐 WorldCat 📖 Library Genesis 🌐 PDF24

⚙️ System

**PANGOLIN**


Log in to get started

Email

Password

Forgot your password?

Log in

 Continue with security key

OR CONTINUE WITH

Authentik

Don't have an account? [Sign up](#)

# Tailscale - Pliki konfiguracyjne

```
tailscale-secret.yaml
1  apiVersion: v1
2  kind: Secret
3  metadata:
4    name: tailscale-auth
5  stringData:
6    TS_AUTHKEY: tskey-auth-abcdefghijklmnopqrstuvwxyz1234567890abcdefghijklmnopqrstuvwxyz
```

# Tailscale - pliki konfiguracyjne cz. 2

```
tailscale-rbac.yaml
1  apiVersion: v1
2  kind: ServiceAccount
3  metadata:
4    name: tailscale
5
6  ---
7
8  apiVersion: rbac.authorization.k8s.io/v1
9  kind: Role
10 metadata:
11   name: tailscale
12 rules:
13   - apiGroups: [""]
14     resourceNames: ["tailscale-auth"]
15     resources: ["secrets"]
16     verbs: ["get", "update", "patch"]
17
18   ---
19
20 apiVersion: rbac.authorization.k8s.io/v1
21 kind: RoleBinding
22 metadata:
23   name: tailscale
24 subjects:
25   - kind: ServiceAccount
26     name: tailscale
27 roleRef:
28   kind: Role
```

# Tailscale - Pliki konfiguracyjne cz. 3

 tailscale-proxy.yaml

```
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: tailscale-proxy
5  spec:
6    serviceAccountName: tailscale
7    initContainers:
8      - name: sysctl
9        image: busybox:latest
10       securityContext:
11         privileged: true
12         command: ["/bin/sh"]
13         args:
14           - -c
15           - sysctl -w net.ipv4.ip_forward=1 net.ipv6.conf.all.forwarding=1
16   containers:
17     - name: tailscale
18       image: ghcr.io/tailscale/tailscale:latest
19       env:
20         - name: TS_KUBE_SECRET
21           value: tailscale-auth
22         - name: TS_AUTHKEY
23           valueFrom:
24             secretKeyRef:
25               name: tailscale-auth
26               key: TS_AUTHKEY
27         - name: TS_USERSPACE
28           value: "false"
29         - name: TS_DEST_IP
30           value: 10.108.40.240
31       securityContext:
32         privileged: true
```

# Tailscale - Dlaczego Takie IP?

```
root@jitsi-1:/home/student/tailscale# kubectl get services
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
kubernetes	ClusterIP	10.244.0.1	<none>	443/TCP	26d
myjitsi-jitsi-meet-jvb	ClusterIP	10.108.40.240	<none>	10000/UDP	31h
myjitsi-jitsi-meet-jvb-metrics	ClusterIP	10.108.15.188	<none>	9888/TCP	31h
myjitsi-jitsi-meet-web	ClusterIP	10.106.197.43	<none>	80/TCP	31h
myjitsi-prosody	ClusterIP	10.108.213.244	<none>	5280/TCP,5281/TCP,5347/TCP,5222/TCP,5269/TCP	31h




```
root@jitsi-1:/home/student/tailscale#
```

# Tailscale - uruchomienie

```
19  # dodanie repo
20
21  helm repo add tailscale https://pkgs.tailscale.com/helmcharts
22  helm repo update
23
24  # postawienie tailscale
25
26  kubectl apply -f tailscale-secret.yaml
27  kubectl apply -f tailscale-rbac.yaml
28  kubectl apply -f tailscale-proxy.yaml
```



# Tailscale - Przekierowanie z VPS

MACHINE	ADDRESSES 	VERSION	LAST SEEN	
tailscale-proxy	100.105.219.104 	1.90.9 Linux 6.12.48+deb13-amd64	 Connected	...

```
30 # routing w iptables
31
32 iptables -t nat -A PREROUTING -p udp --dport 10000 -j DNAT --to-destination 100.105.219.104:10000
33 iptables -t nat -A POSTROUTING -j MASQUERADE
```

# TURN - konfiguracja



turnserver.conf

```
1  realm=google.sex.pl
2  external-ip=158.101.210.198
3  fingerprint
4  lt-cred-mech
5
6  static-auth-secret=abcdefghijklmnopqrstuvwxyz012345
```

# TURN - docker-compose

 docker-compose.yaml

▷ Run All Services

1 **services:**

▷ Run Service

2 **coturn:**

3 **image:** [coturn/coturn:4.6.3](#) **# pin to the current stable tag**

4 **container\_name:** coturn

5 **restart:** unless-stopped

6 **ports:**

7 **# STUN/TURN**

8 - "3478:3478"

9 - "3478:3478/udp"

10 **# TLS-TURN**

11 - "5349:5349"

12 - "5349:5349/udp"

13 **# RTP/RTCP relays (adjust range if you need fewer ports)**

14 - "49000-49020:49000-49020/udp"

15 **environment:**

16 **# Secure long-term credentials (generate once; keep secret)**

17 **STATIC\_AUTH\_SECRET:** "\${TURN\_STATIC\_AUTH\_SECRET}"

18 **EXTERNAL\_IP:** "158.101.210.198"

19 **volumes:**

20 **# Bind your custom conf + persistent database & logs**

21 - "/gdzie/tylko/chcesz/coturn/turnserver.conf:/etc/coturn/turnserver.conf:ro"

22 - "coturn-data:/var/lib/coturn"

23 - "coturn-logs:/var/log"

24 **# Use host networking if you prefer not to publish individual ports**

25 **# network\_mode:** "host"

26

27 **volumes:**

28 **coturn\_data:**

# Efekt - Działające (nierozproszone) Jitsi

The screenshot displays a Jitsi video conference interface. On the left, a chat window is open, showing a list of participants: popple, chyta, test, and dziala. The main video area shows a participant with a red circular overlay containing a white 'P' (likely indicating a problem or error). The console log on the right shows various log messages, including warnings about audio and video constraints, and a message about the audio device being changed.

Chat

Uwaga 04:31 85 3

test

popple  
chyta  
test  
dziala

Everyone

Type a message

test

console

```
2025-11-08T13:29:40:22 [warn] [qc:qualitycontroller]
<bu_processOutboundRtpStats>: Encode stats for LocalTrack(2,
time=17.32511210762326, resolution=360, qualityInitiationReason=
{"source":"cpu","state":"nominal","ownContributionEstimate":0.
2000000002})
2025-11-08T13:29:40:22 [info] [rtc:BridgeChannel] <e.onmessage>
SenderSourceConstraints: b8a1810e-v0 - 360
2025-11-08T13:29:40:22 [debug] [qc:SendVideoController]
<e.onSenderConstraintsReceived>: Sender constraints for source
maxHeight: 360
2025-11-08T13:29:40:22 [info] [xmpp:JingleSessionPC]
<ll.setSenderVideoConstraints>:
JingleSessionPC(session=JBV, initiator=false, sid=54a1guj43s11b)
360, sourceName: b8a1810e-v0
2025-11-08T13:29:40:22 [info] [rtc:TraceablePeerConnection] <ba_
updateIdeoSenderEncodings>:
max height=360, encodings=[{"active":true, "adaptiveTime":false,
{"clockRate":90000, "mimeType":"video/AV1", "sdpFgPLine":"level=
id=5, profile=0, tier=0", "maxBitrate":300000, "networkPriority":
billyMode":"L1T3 KEY", "scaleResolutionDownby":2},
{"active":false, "adaptiveTime":false, "code":
{"clockRate":90000, "mimeType":"video/AV1", "sdpFgPLine":"level=
id=5, profile=0, tier=0", "maxBitrate":0, "networkPriority":"low",
{"active":false, "adaptiveTime":false, "code":
{"clockRate":90000, "mimeType":"video/AV1", "sdpFgPLine":"level=
id=5, profile=0, tier=0", "maxBitrate":0, "networkPriority":"low"
2025-11-08T13:29:40:22 [debug] [rtc:BridgeChannel] <e.onmessage>
Connection stats: bwe=18656000 bps
2025-11-08T13:29:40:22 [debug] [qc:QualityController]
<bu_processOutboundRtpStats>: Encode stats for LocalTrack(2,
time=17.32511210762326, resolution=360, qualityInitiationReason=
2025-11-08T13:29:40:22 [debug] [rtc:BridgeChannel] <e.onmessage>
Connection stats: bwe=18656000 bps
2025-11-08T13:29:40:22 [debug] [qc:QualityController]
<bu_processOutboundRtpStats>: Encode stats for LocalTrack(2,
time=5.671052631578959, resolution=360, qualityInitiationReason=
2025-11-08T13:30:00:22 [debug] [rtc:BridgeChannel] <e.onmessage>
Connection stats: bwe=18656000 bps
2025-11-08T13:30:00:22 [debug] [qc:QualityController]
<bu_processOutboundRtpStats>: Encode stats for LocalTrack(2,
time=5.97089966774076, resolution=360, qualityInitiationReason=
2025-11-08T13:30:02:20 [info] [app:base-app] <PressureObserver>
<anonymous>: Compute pressure state changed:
{"source":"cpu","state":"nominal","ownContributionEstimate":0.
30000000075}]
```

Skalowanie jvb

# Co zostało dodane do values.yaml?

- Aby przeskalować jvb, następujące wartości zostały dodane:

jvb:

```
## Set JVB instance count:
```

```
replicaCount: 2
```

```
## Expose JVB interface port to the outside world
```

```
# only on nodes that actually have it:
```

```
useHostPort: true
```

```
## Make every JVB pod announce its Node's external
```

```
# IP address and nothing more:
```

```
useNodeIP: true
```

octo:

```
## Enable OCTO support for both JVB and Jicofo:
```

```
enabled: true
```

# OCTO - co to?

- OCTO to mechanizm multi-bridge routing, który pozwala rozproszyć uczestników jednego spotkania między wiele instancji Jitsi Videobridge (jvb).
- Bez OCTO każde spotkanie musi być obsługiwane przez jeden jvb; gdy osiągnie limit CPU/bitrate - jakość spada.
- Z OCTO spotkanie może używać kilku jvb jednocześnie.

# Przed skalowaniem jvb

Context: kubernetes-admin@kubernetes [RW]

Cluster: kubernetes

User: kubernetes-admin

K9s Rev: v0.50.16

K8s Rev: v1.32.9

CPU: n/a

MEM: n/a

<0> all

<1> monitoring

<2> default

<a> Attach

<ctrl-d> Delete

<d> Describe

<e> Edit

<?> Help

<shift-j> Jump Owner



pods(default) [4]

NAME	PF	READY	STATUS	RESTARTS	IP	NODE	AGE
myjitsi-jitsi-meet-jicofo-6fff848dfc-hf5d8	●	1/1	Running	0	10.2.161.95	jitsi-2	5d21h
myjitsi-jitsi-meet-jvb-5f599db5c8-74t8z	●	2/2	Running	0	10.2.161.86	jitsi-2	5d21h
myjitsi-jitsi-meet-web-86c6d94bf-bxmr4	●	1/1	Running	0	10.2.161.69	jitsi-2	5d21h
myjitsi-prosody-0	●	1/1	Running	0	10.2.161.107	jitsi-2	2d16h



# Po skalowaniu jvb

Context: kubernetes-admin@kubernetes [RW]  
Cluster: kubernetes  
User: kubernetes-admin  
K9s Rev: v0.50.16  
K8s Rev: v1.32.9  
CPU: n/a  
MEM: n/a

<0> all  
<1> monitoring  
<2> default

<a> A\_  
<ctrl-d> De|  
<d> De|  
<e> Ed|  
<?> He|  
<shift-j> Ju



## pods(default) [6]

NAME	PF	READY	STATUS	RESTARTS	IP	NODE	AGE
myjitsi-jitsi-meet-jicofo-d4978ffdb-w2nkn	●	1/1	Running	0	10.2.161.105	jitsi-2	22h
myjitsi-jitsi-meet-jvb-778dfb5469-c74sx	●	2/2	Running	0	10.2.161.75	jitsi-2	22h
myjitsi-jitsi-meet-jvb-778dfb5469-ghklw	●	2/2	Running	0	10.2.63.188	itsi-3	22h
myjitsi-jitsi-meet-web-86c6d94bf-82fsp	●	1/1	Running	0	10.2.161.68	jitsi-2	22h
myjitsi-prosody-0	●	1/1	Running	0	10.2.63.190	itsi-3	22h
tailscale-proxy	●	1/1	Running	0	10.2.161.79	jitsi-2	22h

# Jak to wygląda w logach jicofo

```
jicofo 2025-11-29 11:49:51.313 FIMR: [279] [room=jvbberweryinternal-muc-meet.jitsi] ChatRoomImpl.doProcessPresence@679: Presence received <presence xmlns='jabber:client' xml:lang='en-US' to='focusauth.meet.jitsi@focus' from='jvbberweryinternal-muc-meet.jitsi@jitsi' jitsi-meet='jvb-7780fb9409' c74x='priority'><priority><stats xmlns='http://jitsi.org/protocol/colibri'><stat name='incoming_loss' value='0' /><stat name='outgoing_loss' value='0' /><stat name='overall_loss' value='0' /><stat name='endpoints_with_high_outgoing_loss' value='0' /><stat name='local_active_endpoints' value='0' /><stat name='bit_rate_download' value='0' /><stat name='bit_rate_upload' value='0' /><stat name='packet_rate_download' value='0' /><stat name='packet_rate_upload' value='0' /><stat name='rtt_aggregate' value='0' /><stat name='num_eps_overseen_ding' value='0' /><stat name='octo_conferences' value='0' /><stat name='inactive_conferences' value='0' /><stat name='p2p_conferences' value='0' /><stat name='endpoints' value='0' /><stat name='participants' value='0' /><stat name='receive_only_endpoints' value='0' /><stat name='inactive_endpoints' value='0' /><stat name='octo_endpoints' value='0' /><stat name='endpoints_sending_audio' value='0' /><stat name='endpoints_sending_video' value='0' /><stat name='largest_conference' value='0' /><stat name='octo_receive_bitrate' value='0' /><stat name='octo_receive_packet_rate' value='0' /><stat name='octo_send_bitrate' value='0' /><stat name='octo_send_packet_rate' value='0' /><stat name='endpoints_with_suspended_sources' value='0' /><stat name='total_conferences_created' value='0' /><stat name='total_conferences_completed' value='0' /><stat name='total_conference_seconds' value='643' /><stat name='total_participants' value='0' /><stat name='total_visitors' value='0' /><stat name='num_eps_no_mq_transport_after_delay' value='0' /><stat name='total_relays' value='11' /><stat name='num_relays_no_mq_transport_after_delay' value='0' /><stat name='total_keyframes_received' value='0' /><stat name='total_layering_changes_received' value='0' /><stat name='total_video_stream_allseconds_received' value='0' /><stat name='stress_level' value='0.0011888992607794098' /><stat name='conferences' value='0' /><stat name='visitors' value='0' /><stat name='local_endpoints' value='0' /><stat name='total_data_channel_messages_received' value='115' /><stat name='total_data_channel_messages_sent' value='109' /><stat name='total_colibri_web_socket_messages_received' value='0' /><stat name='total_colibri_web_socket_messages_sent' value='0' /><stat name='total_bytes_received' value='2947828' /><stat name='dtls_failed_endpoints' value='0' /><stat name='total_bytes_sent' value='53368' /><stat name='total_packets_received' value='26324' /><stat name='total_packets_sent' value='105' /><stat name='total_bytes_received_octo' value='61904' /><stat name='total_bytes_sent_octo' value='2793987' /><stat name='total_packets_received_octo' value='994' /><stat name='total_packets_sent_octo' value='24728' /><stat name='total_dominant_speaker_changes' value='1' /><stat name='preemptive_kfr_sent' value='0' /><stat name='preemptive_kfr_suppressed' value='0' /><stat name='total_ice_failed' value='0' /><stat name='total_ice_succeeded' value='12' /><stat name='total_ice_succeeded_relayed' value='0' /><stat name='average_participant_stress' value='0.01' /><stat name='threads' value='52' /><stat name='graceful_shutdown' value='false' /><stat name='shutting_down' value='false' /><stat name='drain' value='false' /><stat name='current_timestamp' value='2025-11-29 10:49:51.388' /><stat name='relay_id' value='10.2.63.188' /><stat name='muc_clients_configured' value='1' /><stat name='muc_clients_connected' value='1' /><stat name='muc_configured' value='1' /><stat name='muc_joined' value='1' /><stat name='endpoints_with_spurious_remb' value='0' /><stat name='healthy' value='true' /><stat name='endpoints_disconnected' value='0' /><stat name='endpoints_reconnected' value='0' /><stat name='version' value='2.3.259-g22868ff7d' /><stat name='region' value='all' /></stats></xmns' http://jabber.org/protocol/caps' hash='sha-1' node='https://igniterealtime.org/projects/smack' ver='V78g620rJQfGmPE05tm/hyxw' /><occupant-id xmlns='urn:xmpp:occupant-id' id='Yb2DQlnu1296-022nj586-Nq-qvarE1XNmu1P2K78' /><occupant-id> <xmlns='http://jabber.org/protocol/muc#user'><item affiliation='owner' jid='jvbauth.meet.jitsi@1E4WY' PwV1lb' role='moderator' /></item></xmns'</presence>
```

```
jicofo 2025-11-29 11:49:52.163 FIMR: [279] [room=jvbberweryinternal-muc-meet.jitsi] ChatRoomImpl.doProcessPresence@679: Presence received <presence xmlns='jabber:client' xml:lang='en-US' to='focusauth.meet.jitsi@focus' from='jvbberweryinternal-muc-meet.jitsi@jitsi' jitsi-meet='jvb-7780fb9409' c74x='priority'><priority><stats xmlns='http://jitsi.org/protocol/colibri'><stat name='incoming_loss' value='0' /><stat name='outgoing_loss' value='0' /><stat name='overall_loss' value='0' /><stat name='endpoints_with_high_outgoing_loss' value='0' /><stat name='local_active_endpoints' value='0' /><stat name='bit_rate_download' value='0' /><stat name='bit_rate_upload' value='0' /><stat name='packet_rate_download' value='0' /><stat name='packet_rate_upload' value='0' /><stat name='rtt_aggregate' value='0' /><stat name='num_eps_overseen_ding' value='0' /><stat name='octo_conferences' value='0' /><stat name='inactive_conferences' value='0' /><stat name='p2p_conferences' value='0' /><stat name='endpoints' value='0' /><stat name='participants' value='0' /><stat name='receive_only_endpoints' value='0' /><stat name='inactive_endpoints' value='0' /><stat name='octo_endpoints' value='0' /><stat name='endpoints_sending_audio' value='0' /><stat name='endpoints_sending_video' value='0' /><stat name='largest_conference' value='0' /><stat name='octo_receive_bitrate' value='0' /><stat name='octo_receive_packet_rate' value='0' /><stat name='octo_send_bitrate' value='0' /><stat name='octo_send_packet_rate' value='0' /><stat name='endpoints_with_suspended_sources' value='0' /><stat name='total_conferences_created' value='0' /><stat name='total_conferences_completed' value='0' /><stat name='total_conference_seconds' value='613' /><stat name='total_participants' value='0' /><stat name='total_visitors' value='0' /><stat name='num_eps_no_mq_transport_after_delay' value='0' /><stat name='total_relays' value='11' /><stat name='num_relays_no_mq_transport_after_delay' value='0' /><stat name='total_keyframes_received' value='1' /><stat name='total_layering_changes_received' value='1' /><stat name='total_video_stream_allseconds_received' value='63' /><stat name='stress_level' value='5.180589598837115E-4' /><stat name='conferences' value='0' /><stat name='visitors' value='0' /><stat name='local_endpoints' value='0' /><stat name='total_data_channel_messages_received' value='113' /><stat name='total_data_channel_messages_sent' value='159' /><stat name='total_colibri_web_socket_messages_received' value='0' /><stat name='total_colibri_web_socket_messages_sent' value='0' /><stat name='total_bytes_received' value='32798' /><stat name='dtls_failed_endpoints' value='0' /><stat name='total_bytes_sent' value='2793987' /><stat name='total_packets_received' value='692' /><stat name='total_packets_sent' value='24728' /><stat name='total_bytes_received_octo' value='24728' /><stat name='total_bytes_sent_octo' value='994' /><stat name='total_dominant_speaker_changes' value='1' /><stat name='preemptive_kfr_sent' value='0' /><stat name='preemptive_kfr_suppressed' value='0' /><stat name='total_ice_failed' value='0' /><stat name='total_ice_succeeded' value='12' /><stat name='total_ice_succeeded_relayed' value='0' /><stat name='average_participant_stress' value='0.01' /><stat name='threads' value='54' /><stat name='graceful_shutdown' value='false' /><stat name='shutting_down' value='false' /><stat name='drain' value='false' /><stat name='current_timestamp' value='2025-11-29 10:49:52.155' /><stat name='relay_id' value='10.2.161.75' /><stat name='muc_clients_configured' value='1' /><stat name='muc_clients_connected' value='1' /><stat name='muc_configured' value='1' /><stat name='muc_joined' value='1' /><stat name='endpoints_with_spurious_remb' value='0' /><stat name='healthy' value='true' /><stat name='endpoints_disconnected' value='0' /><stat name='endpoints_reconnected' value='0' /><stat name='version' value='2.3.259-g22868ff7d' /><stat name='region' value='all' /></stats>< xmlns='http://jabber.org/protocol/caps' hash='sha-1' node='https://igniterealtime.org/projects/smack' ver='V78g620rJQfGmPE05tm/hyxw' /><occupant-id xmlns='urn:xmpp:occupant-id' id='Yb2DQlnu1296-022nj586-Nq-qvarE1XNmu1P2K78' /><occupant-id> <xmlns='http://jabber.org/protocol/muc#user'><item affiliation='owner' jid='jvbauth.meet.jitsi@1E4WY' PwV1lb' role='moderator' /></item></xmns'</presence>
```

Przetestowanie skalowania

# Szybkie przypomnienie

- Master Node - maszyna której rolą jest zarządzanie Kubernetes
- Worker Node - maszyna której rolą jest trzymać aplikacje (w podach) użytkownika

# Kubernetes

Co się okazuje:

- Master nie obsługuje ruchu użytkowników.
- Master nie uruchamia Podów aplikacyjnych.
- Master nie streamuje danych, nie przetwarza requestów HTTP, nie robi downloadów/uploadów.

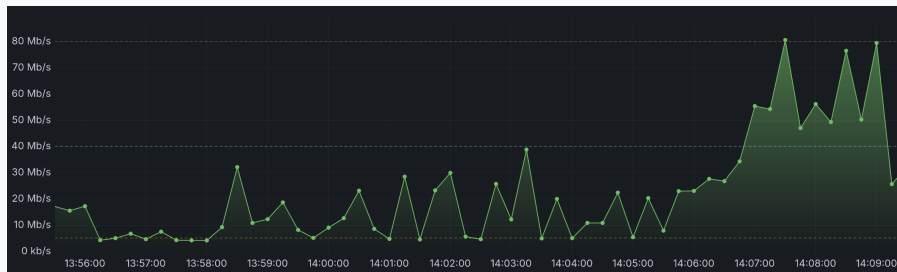
# Kubernetes 2

Nawet jeśli master ma wolny internet (np. 1 Mbps), nie wpływa to na:

- prędkość odpowiedzi aplikacji,
- throughput,
- czas obsługi zapytań HTTP/Websocket/GRPC,
- szybkość pobierania danych przez aplikację.

# Kubernetes 3

To w trakcie stress testowania jitsi, gdy master ma 128kbit/s:



# Czemu nie użyliśmy narzędzi zewnętrznych

WebRTCperf dla jitsi jest całkowicie zepsute.



# No to teraz jak przetestować jitsi...

Jitsi bardzo dobrze się skaluje. Według oficjalnych pomiarów:

- Dla 1056 strumieni wideo z bitrate 550mbit/s zużycie CPU to tylko 20% przy czterordzeniowym procesorze.
- Dla 1056 strumieni wideo Zużycie RAMu nie przekroczyło 1.5GB

# Czemu tak się dzieje?

Jitsi Videobridge jest tylko przekaźnikiem, bez żadnego transkodowania.  
Nie tworzy skomplikowanych reguł, ani nie weryfikuje nic.

Działa trochę jak router.

Demo

<https://jitsi.google.sex.pl>



Dziękujemy za uwagę