**Step 1: Install Kasm Workspaces on Bob**

Run these commands on **Bob** (University PC):

1. **Update the system**

bash

sudo apt update && sudo apt upgrade -y

1. **Download and install Kasm Workspaces**

bash

curl -O https://kasm-static-content.s3.amazonaws.com/kasm\_release\_1.14.0.6e3d92.tar.gz

tar -xvf kasm\_release\_1.14.0.6e3d92.tar.gz

cd kasm\_release

sudo bash install.sh

* + Accept any prompts during installation.
  + Once completed, Kasm Workspaces should be running on **Bob’s local IP, port 443**.

1. **Find Bob’s local IP on the university network**

bash

hostname -I

Example output: 192.168.1.50

1. **Verify Kasm is working locally**  
   Open a browser **on Bob** and go to:

cpp

https://192.168.1.50

* + You should see the Kasm Workspaces login page.

**Step 2: Create an SSH Reverse Tunnel to Sam**

Since Bob can't be port-forwarded, we need to **tunnel its Kasm Workspaces traffic through Sam**.

Run this on **Bob**:

bash

ssh -R 8080:localhost:443 server2@26093security.ddns.net -p 22

* This forwards Bob’s **port 443** (Kasm Workspaces) to **Sam’s port 8080**.
* Now, Sam can reach Kasm at localhost:8080.

To make this persistent, install autossh and set up the tunnel to restart automatically:

bash

sudo apt install autossh -y

autossh -f -N -R 8080:localhost:443 server2@26093security.ddns.net -p 22

**Step 3: Configure NGINX on Sam**

Now we need to tell NGINX on Sam to forward incoming traffic to Bob’s Kasm Workspaces.

1. **Edit NGINX config on Sam**

bash

sudo nano /etc/nginx/sites-available/kasm

Replace everything with:

nginx

server {

listen 80;

server\_name 26093security.ddns.net;

location / {

proxy\_pass http://localhost:8080;

proxy\_set\_header Host $host;

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header X-Forwarded-Proto $scheme;

}

}

1. **Enable the config**

bash

sudo ln -s /etc/nginx/sites-available/kasm /etc/nginx/sites-enabled/

sudo systemctl restart nginx

**Step 4: Test Public Access**

1. Open a browser **on your home PC** and go to:

cpp

http://26093security.ddns.net

1. If everything is working, you should see the **Kasm Workspaces login page**! 🎉

**Troubleshooting**

🔹 **Still seeing "502 Bad Gateway"?**

* Check if the SSH tunnel is running:

bash

ps aux | grep ssh

If it’s not running, restart it with:

bash

autossh -f -N -R 8080:localhost:443 server2@26093security.ddns.net -p 22

🔹 **NGINX errors?**  
Run:

bash

sudo journalctl -xe | tail -20

🔹 **SSL Errors in Browser?**  
For HTTPS, you'll need to add a free **Let's Encrypt SSL certificate** (optional).

**Final Notes**

✅ Bob is now running Kasm Workspaces.  
✅ Bob tunnels Kasm’s port **443 → Sam’s port 8080**.  
✅ Sam's NGINX forwards 26093security.ddns.net → localhost:8080.  
✅ You can access Kasm Workspaces publicly at http://26093security.ddns.net.

🚀 Let me know if anything needs fixing!