



# General installation requirements

## Prepare your deployment environment

To run an OpenTalk instance, we assume that a certain infrastructure configuration already exists. Please ensure, that the following resources are prepared and reachable before you begin with the OpenTalk installation.

## Server

We recommend a virtual machine with a minimum configuration of:

- CPU: 8 Cores
- RAM: 8 GB
- HDD: 50 GB
- 1 public network interface (used for external services, e.g. reverse-proxy)
- 1 private network interface (used for internal services, e.g. rabbitmq)

The machine should be set up with an operating system of your choice, e.g. a Debian 11+. Additionally, the Docker Engine and the Compose plugin are required.

## Firewall Ports (open)

Ensure, that the following ports are opened in your firewall and accessible from the internet.

- 80/tcp (reverse-proxy)
- 443/tcp (reverse-proxy)
- 20000-26400/udp (janus-gateway)
- 40000-49999/udp (SIP)
- 5060/udp (SIP)

## DNS Records

OpenTalk consists of several services. To make them work together, some services need a specific DNS record. If your domain is for example example.com, you have to create the following DNS records and point them to your **public IP-address**.

- example.com (OpenTalk Web-UI)
- accounts.example.com (Keycloak instance)
- controller.example.com (OpenTalk controller service)
- pad.example.com (Protocol feature)
- whiteboard.example.com (Whiteboard feature)

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## Reverse-Proxy and SSL certificates

Get valid SSL certificates for your DNS records at the certificate authority of your choice. We recommend using letsencrypt in combination with certbot for this purpose.

Set up a reverse proxy that terminates the SSL connections and forward the requests to the appropriate OpenTalk upstream services. When you use the default ports, the services listen on the following ports on the local interface:

- frontend: localhost:8090
- controller: localhost:8080
- keycloak: localhost:8087
- pad: localhost:9001
- whiteboard: localhost:9666

We recommend using nginx as reverse-proxy. Please refer the official nginx documentation for further information.

As an inspiration, we provide configuration examples in the directory `./lite/extras/nginx-samples`. Customize it to your needs.

## Other preparations / external infrastructure Services

### TURN Server

If you want to use a turn server with OpenTalk. We recommend Coturn or Eturnal:

- <https://github.com/coturn/coturn>
- <https://eternal.net/doc/container.html>

Ensure it is properly installed. Get the DNS record of the TURN host and shared key and keep it for later configuration.

### NDT Server

For using the speed-test feature at the room lobby screen, an external NDT server is needed for bandwidth measurement.

Refer the instructions at <https://www.measurementlab.net/blog/run-a-private-ndt-server/> for installation. Get the DNS record of the NDT host and keep it for later configuration.

### SIP Provider

If you want to use the Call-In feature, you need a SIP-account. Get your SIP-account login credentials and SIP-gateway informations and keep them for later configuration.