技术开启新“视”界
Technology Bring New Vision

基于Licode的WebRTC全球分布式架构

百家云 陈聪

LiveVideoStack 音视频技术社区

CSDN

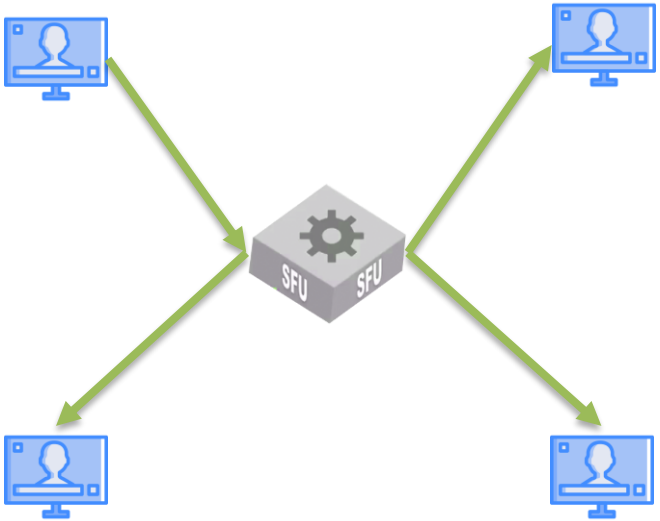
目录

SFU介绍

Selective Forwarding Unit (SFU)

优点：

- 延迟低
- 消耗低



SFU介绍

单SFU问题1 - 人数限制

场景：大班课场景下，1个老师，200个学生，老师的清晰度为 1080p，30fps，带宽约为3.5Mb。

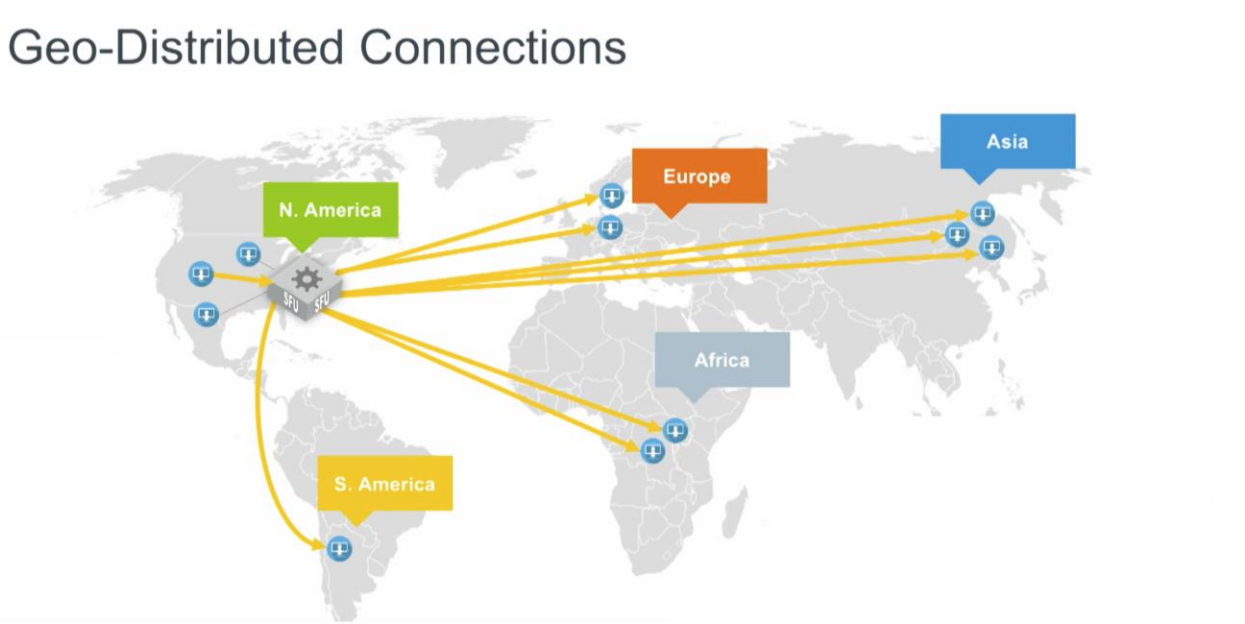
出口带宽=3.5Mb * 200 = 700Mb

随着学生人数的增加，需要的出口带宽越多。但是单个SFU服务器的带宽是有限制，因此人数也因为带宽受到了限制。

SFU介绍

单SFU问题2 – 地理分布，就近接入

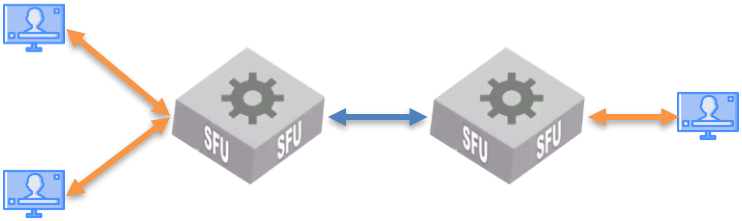
SFU介绍



- 高延迟
- 流量浪费

级联SFU介绍

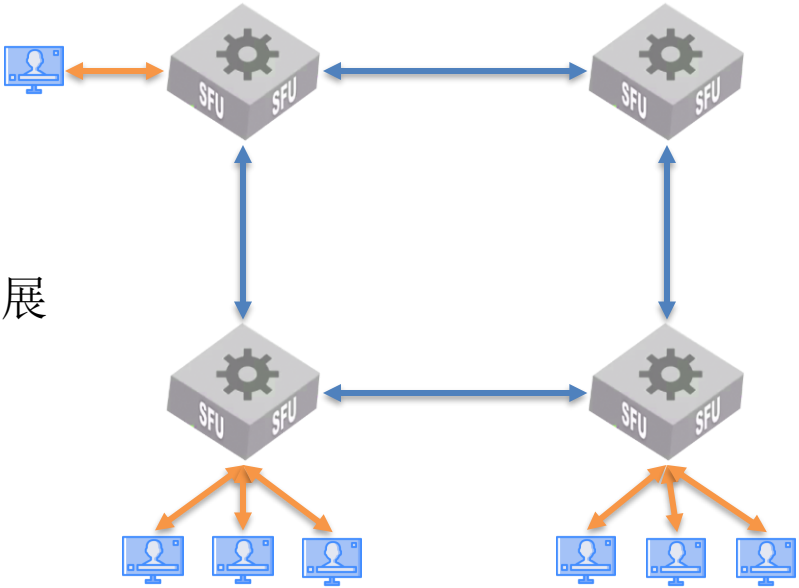
Cascaded SFUs



级联SFU介绍

横向扩展（解决人数限制问题）

- 无人数限制
- 动态横向扩展



级联SFU介绍

地域级联 (地理分布，就近接入)

级联SFU介绍

Cascading for Reach

Licode介绍

Licode官网 : http://lynckia.com/licode
Licode git ：https://github.com/lynckia/licode

Introducing Licode.

Built on top of WebRTC.

Licode is based on WebRTC technologies. It is 100% compatible with latest stable versions of Google Chrome. Your users will be able to talk from their web browsers with no need to installing anything.

Easy, fast and scalable.

You don't need to care about complicated real-time infrastructures. It provides a fast development of videoconference features based on HTML5. And we make it 100% scalable.

Videoconference, Streaming, Recording.

Licode allows you to include videoconference rooms on your web. But you can also implement streaming, recording and any other real-time multimedia features you dreamt of!

Licode介绍

Licode 模块

Erizo

It's the WebRTC Multipoint Control Unit (MCU). It's written in C++ and is 100% compatible with WebRTC standard and its protocols.

Erizo API

A Node.js addon wrapper for Erizo. It configures and manages all aspects of Erizo from your Node.js applications!

Erizo Controller

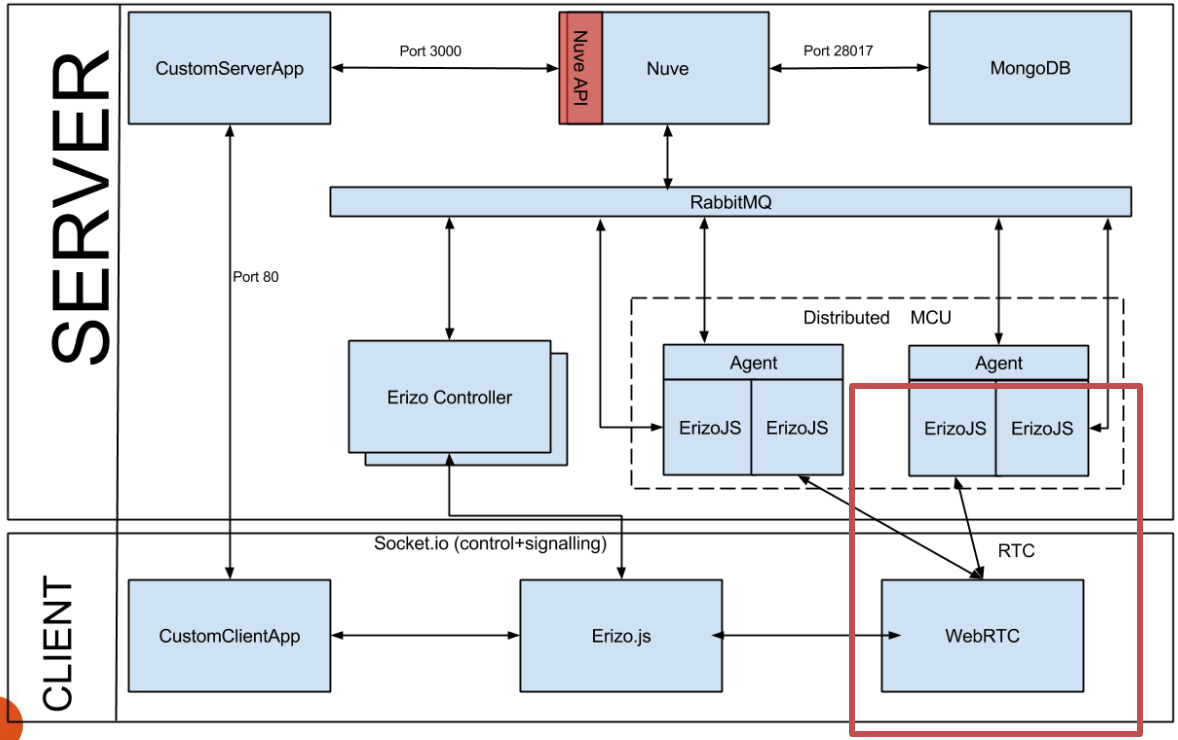
It's the core of the service. It provides Rooms to users in order to make multiconference sessions. It also supplies enough security mechanisms and additional capabilities: data, user lists, events, and so on.

Nuve

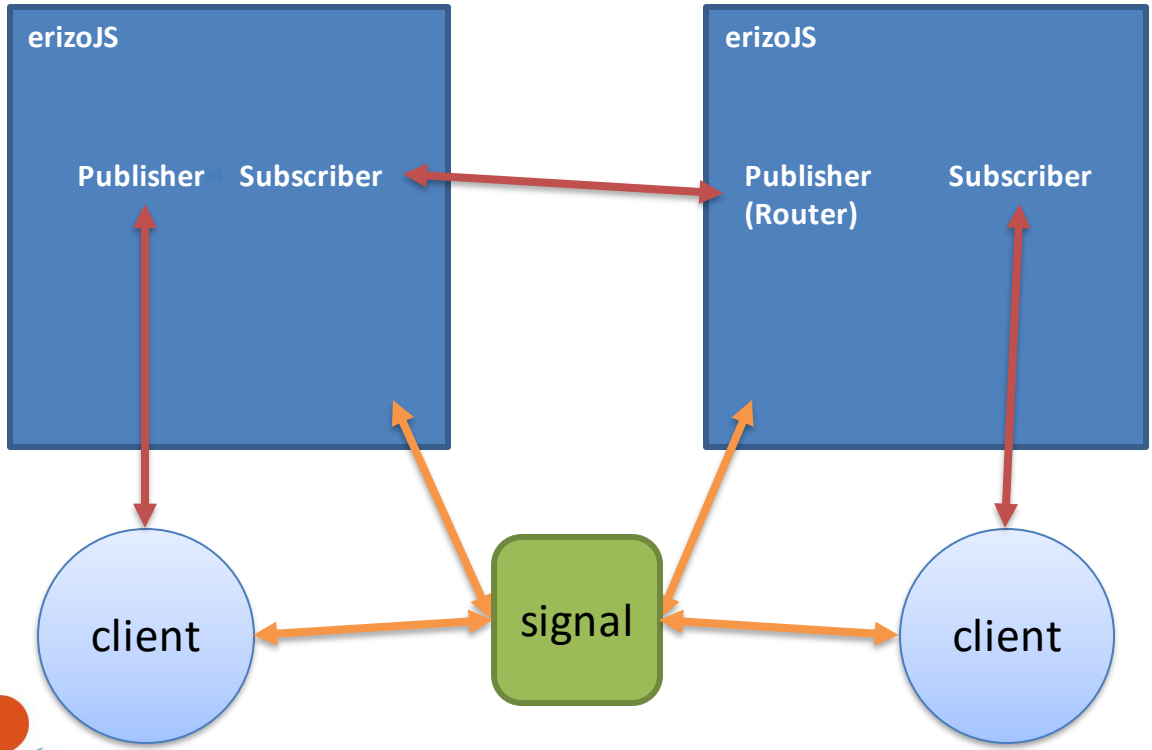
This videoconference management API offers Room management, Users access control and service registration to third-party applications. It also provides Cloud scalability to the service.

Licode介绍

Licode 模块



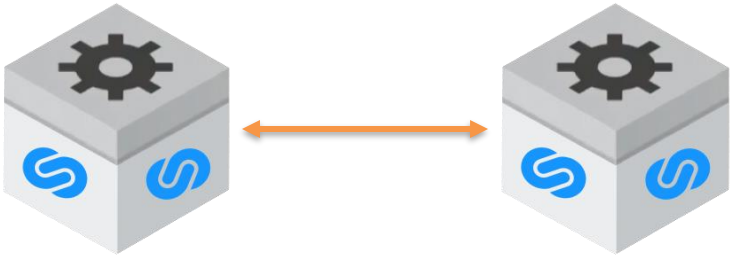
基于Licode级联实现



基于Licode级联实现

单节点Docker化

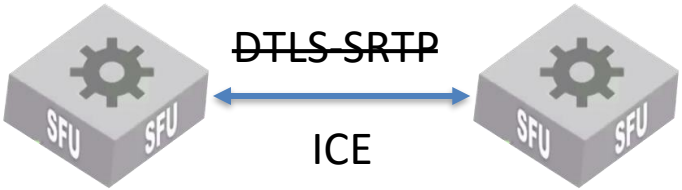
- 动态扩展
- 快速部署
- 高容灾



基于Licode级联实现

优化:级联间去加密

- 加快连接速度
- 节省资源



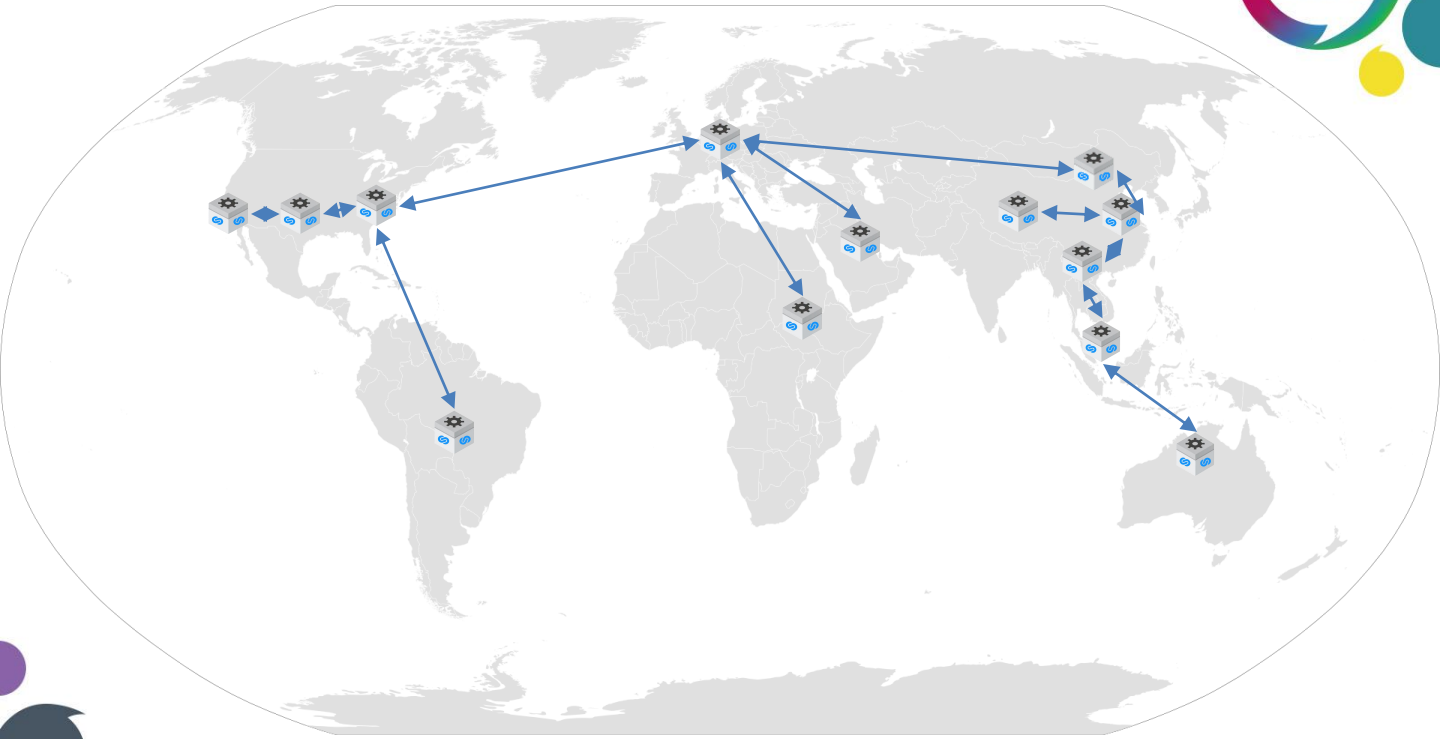
通过重新实现Licode::Transport类，实现ICE传输，去除DTLS-SRTP加密

基于Licode级联实现

其他级联优化

- ICE(Libnice全局锁)
- Simulcast
- FEC
- NACK
- ….

全球部署



Thank you

LiveVideoStack 音视频技术社区

CSDN