



UbuntuNet  
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# Open Source Communication System for R& E Community

Case for SomaliREN VC

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# Agenda

- Introduction
- Existing Video Conferencing Solutions
- SomaliREN Intervention (VC Solution)
- SomaliREN VC Architecture
- Challenges
- Lessons Learned

# Introduction

- In Somalia, one of the most conflict-affected parts of the world, battling the COVID-19 pandemic has been an ordeal.
- To stop the **spread of the virus**, the government suspended all classes which has dealt a blow to the universities since they **rely on students' tuition to sustain their institutions**.
- Universities were unprepared for a sudden switch to online learning prior to the COVID-19 pandemic.

# Existing Video Conferencing Solutions

- There are many popular commercial options, such as Zoom, Skype, and Microsoft Teams, etc.
- **BigBlueButton** -which powers SomaliREN VC- is an open source web conferencing system for online learning. BBB has the core features(include **real-time sharing of audio, video, presentation, and screen as well as recording sessions for later playback**) you would expect from a commercial web conferencing system under an open source license.

# SomaliREN Intervention (VC Solution)

- The service was initially deployed on limited resources (2 servers)
- Later, it was scaled up by adding 8 servers with the help of the [UbuntuNet Alliance](#) and [RENU](#) who provided cloud servers as well as 2 physical servers donated by Heritage, a member of our community.
- Number of activities on SomaliREN VC during the lockdown;
  - 15 out of 20 member institutions deliver classes online
  - 14 online workshops conducted
  - 5 SomaliREN council meetings

# SomaliREN VC in Action

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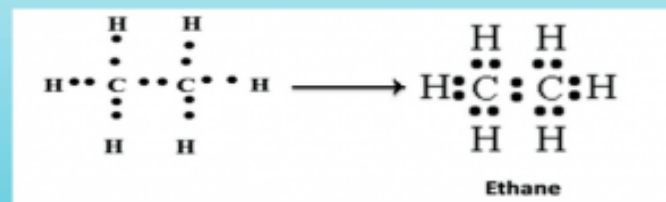
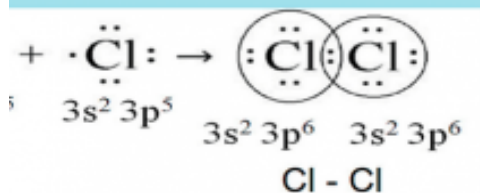
## Introduction

Covalent bonds can be visualized with the aid of Lewis dot structures

Two atoms share one electron pair, bond is known as **single covalent bond** and is represented by **one dash (-)**.

Two atoms share two electron pairs, bond is known as **double covalent bond** and is represented by **two dashes (=)**.

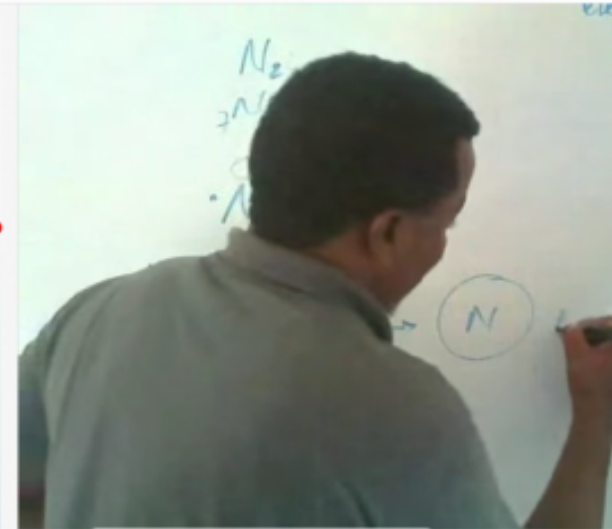
Two atoms share three electron pairs, bond is known as **triple covalent bond** and is represented by **three dashes (≡)**.



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Recorded with SomaliREN Videoconferencing Platform.

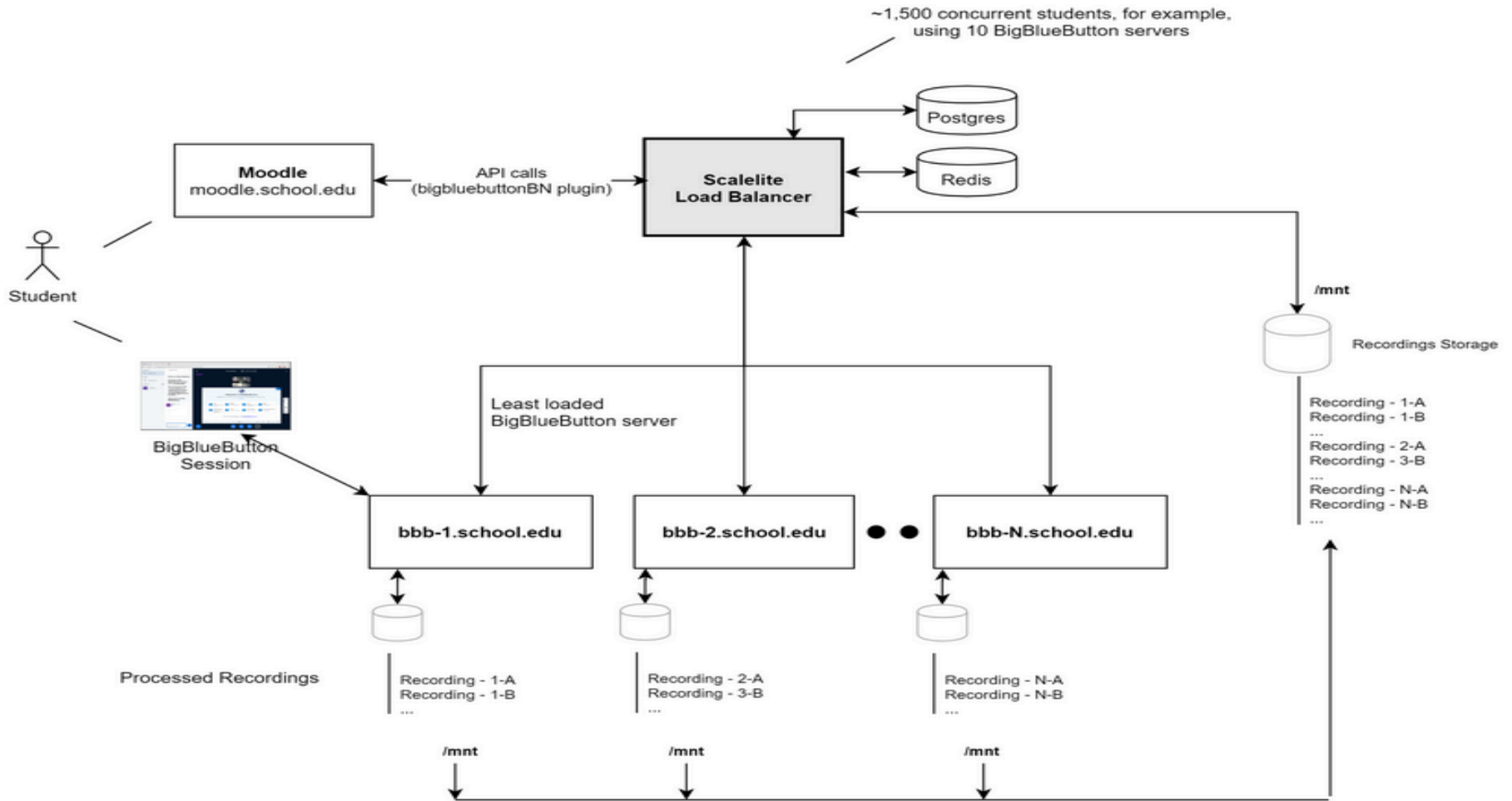


# SomaliREN VC Architecture

- Architecture of SomaliREN VC contains the following components:
  - Multiple BBB servers
  - Scalelite LoadBalancer Server
  - NFS Shared Volume
  - PostgreSQL Database
  - Redis Cache

HOSTNAME	STATE	STATUS	MEETINGS	USERS	LARGEST MEETING	VIDEOS
vc.somaliren.org.so	enabled	online	4	67	32	0
vc5.somaliren.org.so	enabled	online	3	38	29	0
vc1.somaliren.org.so	enabled	online	4	6	3	0
vc2.somaliren.org.so	enabled	online	4	29	18	0
vc6.somaliren.org.so	enabled	online	4	19	8	0
vc7.somaliren.org.so	enabled	online	4	24	11	0

# SomaliREN VC Architecture



# Challenges

- The scalability of the platform to meet the growing demand.
- Scheduling classes on the platform were another issue as there are restrictions on the number of active sessions per server on the underlying technology.
- Some students without reliable internet access and/or technology struggle to participate in online learning which exacerbated inequalities in HE.
- The unwillingness of local operators to zero-rate education and research traffic.

# Lessons learned (Knowledge Transfer)

- The pandemic has exposed the **unpreparedness of many higher education institutions in the country to migrate online.**
- The **importance of self-reliance** on the part of Universities as well as working closely with the rest of the community in the region.
- Responses to COVID-19 have speeded up the adoption of digital technologies by several years.
- Scaling BBB webinar has been conducted by SomaliREN in collaboration with UbuntuNet.

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Thank you