



Introduction & Services

- Prof. Kazi Muheymin-Us-Sakib
TST Consultant (Technical)
BdREN

BdREN – at a glance

- Bangladesh Research and Education Network

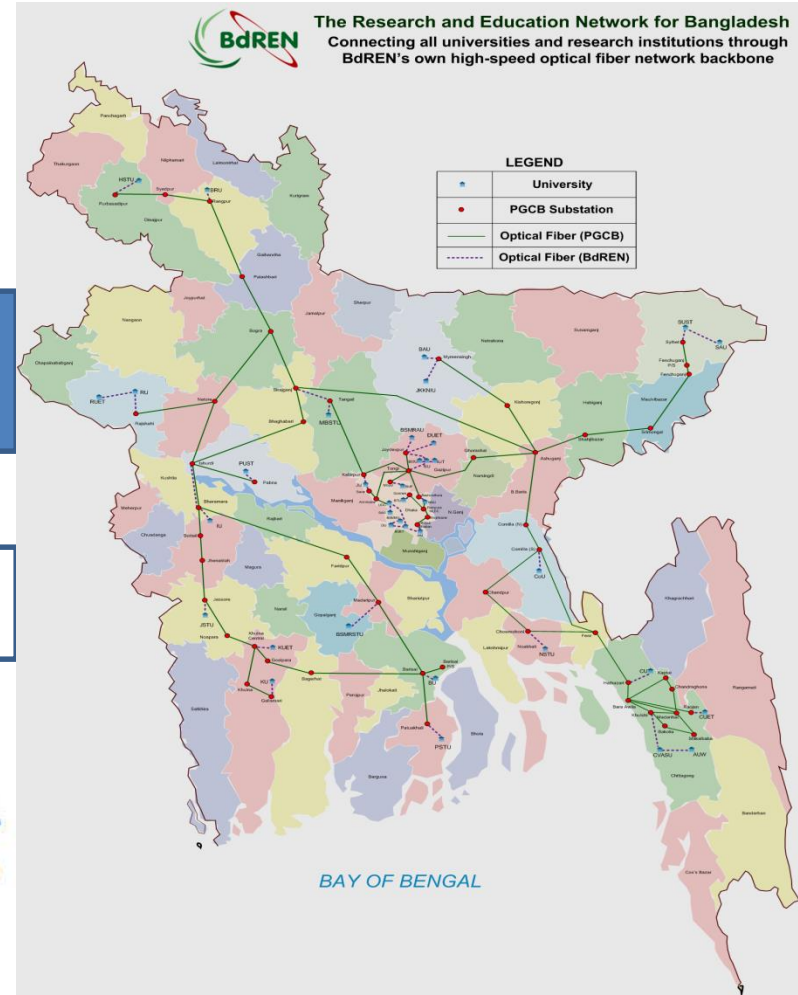


Component
of

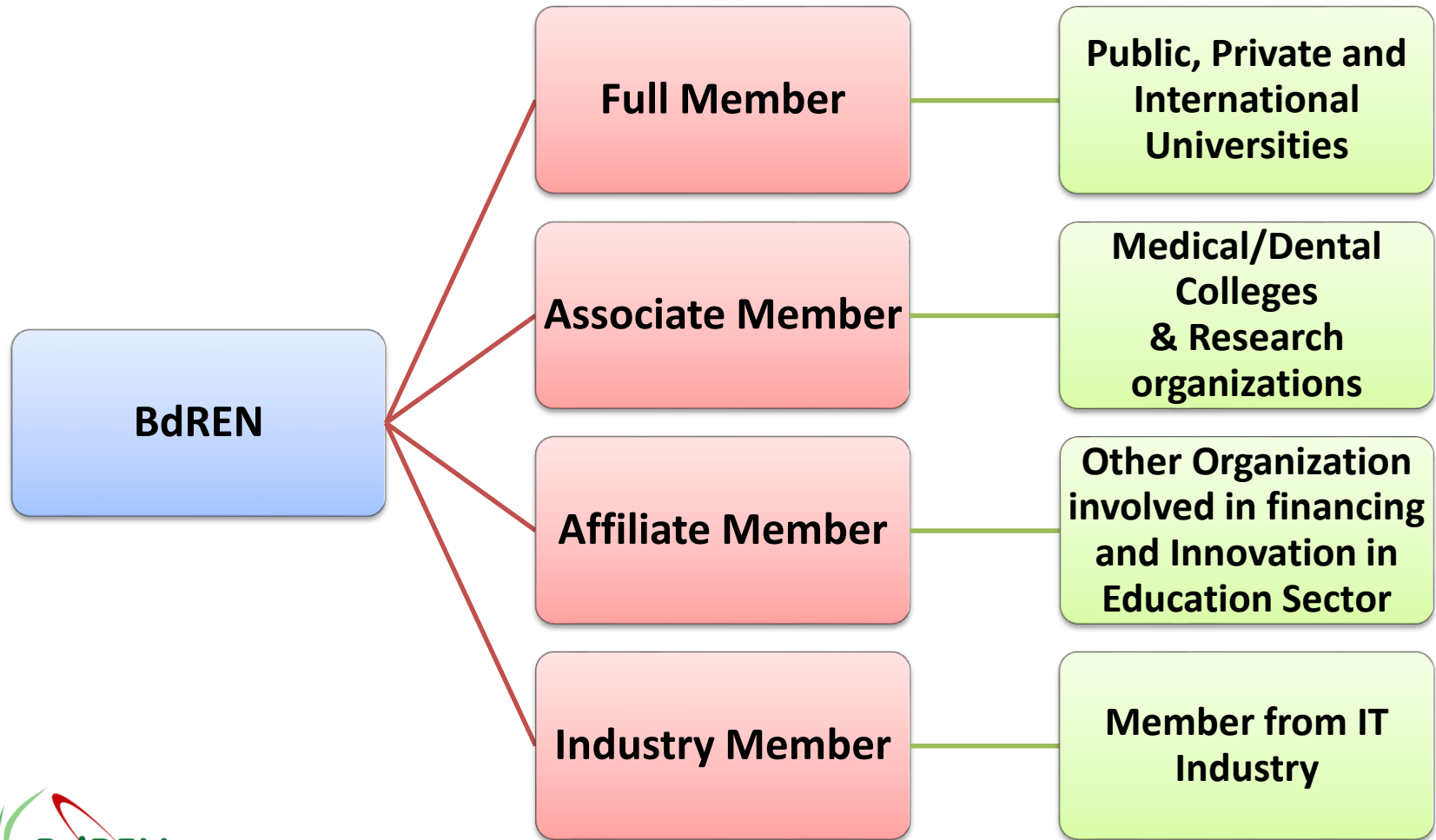


Bringing Higher Education and Research Institutions under single network and connecting with global R&D networks

In Collaboration with



BdREN Stakeholder



BdREN Governance

- **BdREN is run by a Trust Organization on not-for-profit basis**
- **Operation and Maintenance Responsibility to BdREN Trust**
- **11-member Trustee Board headed by UGC Chairman, Trustees mainly from Universities.**



Formation of Trustee Board

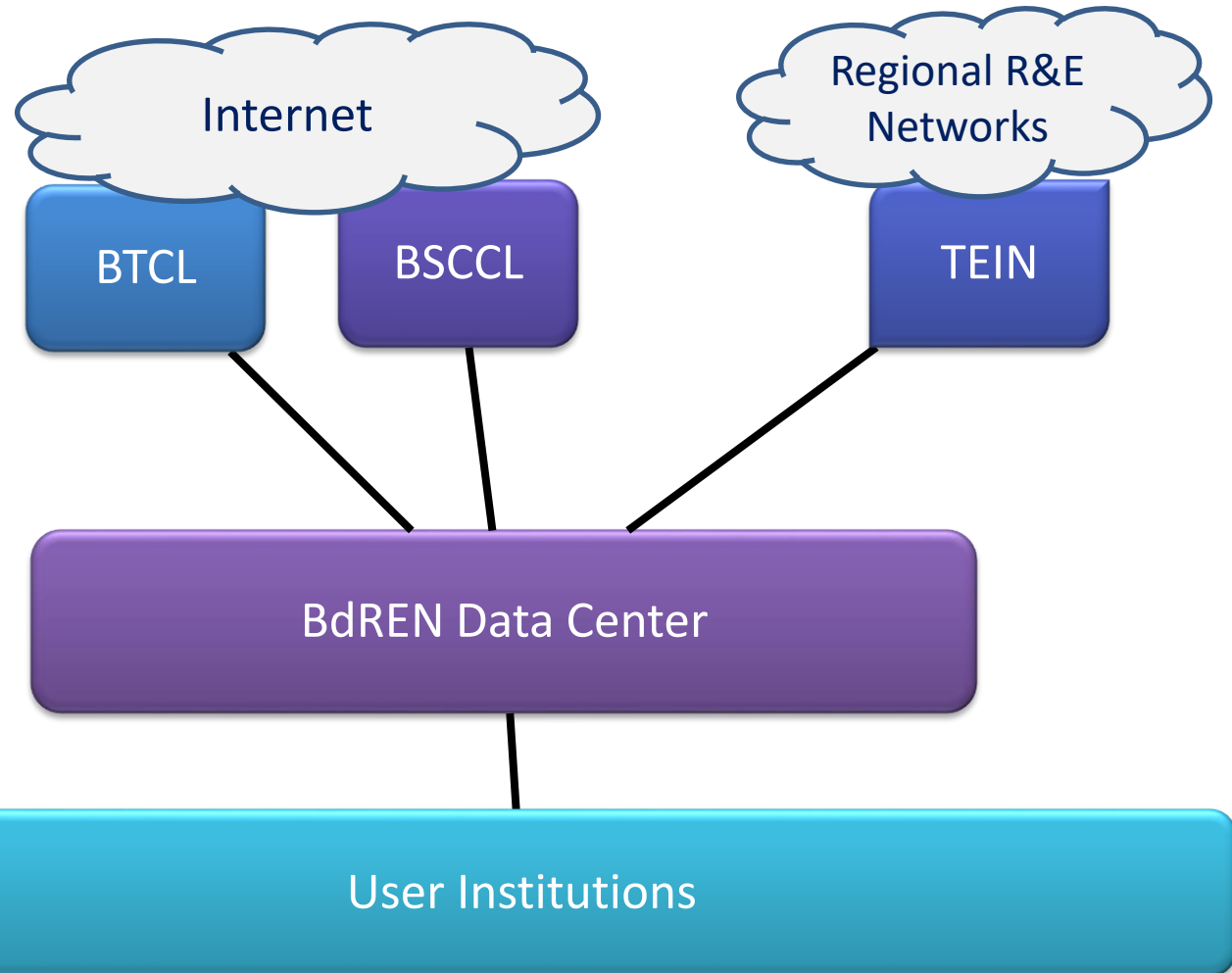
- **Chairman, UGC – Chairperson**
- **Member in Charge of BdREN, UGC – Vice Chairperson**
- **Vice Chancellors from Public Universities – 4**
- **Vice Chancellors from Private Universities – 2**
- **Representative from MoE-1**
- **Inductee Trustees - 2**



BdREN Services



BdREN – International Connectivity



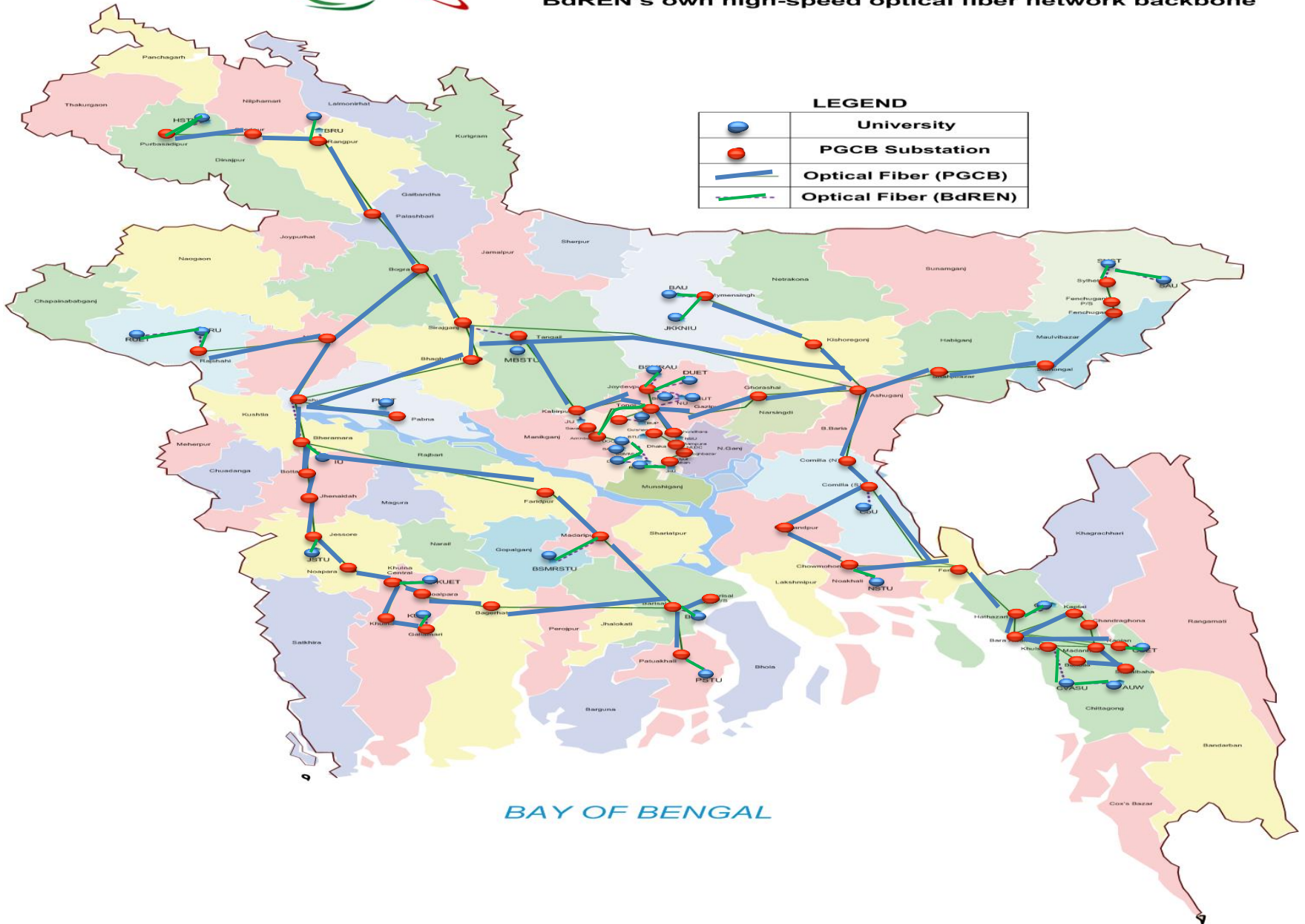
BdREN : Network

- Backbone Network Designed on PGCB Optical Fiber Network of 3200+ KM
- Last mile connectivity through 300+ KM of Optical Fiber
- 1G connectivity to each Institution
 - 34 Public Universities
 - 2 International Universities
 - 3 Private Universities





The Research and Education Network for Bangladesh
 Connecting all universities and research institutions through
 BdREN's own high-speed optical fiber network backbone



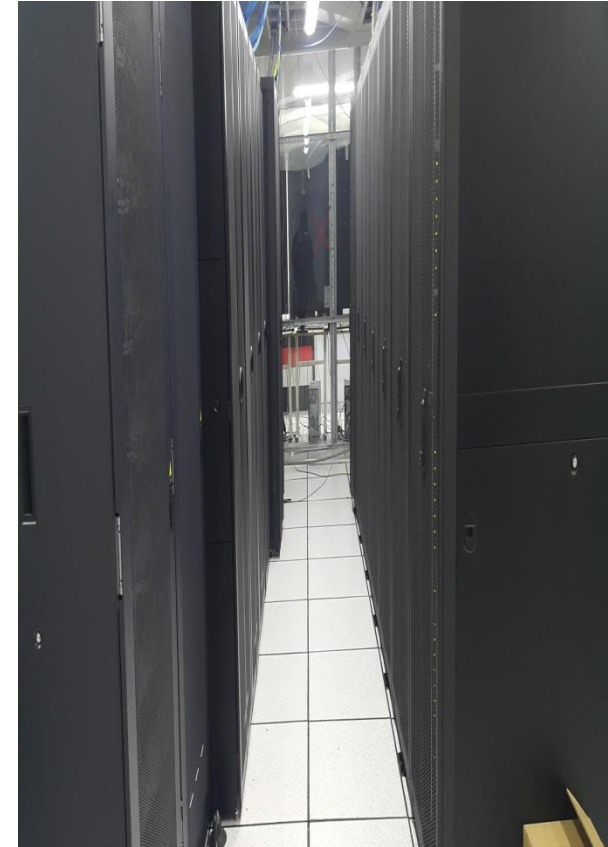
LEGEND

	University
	PGCB Substation
	Optical Fiber (PGCB)
	Optical Fiber (BdREN)

BAY OF BENGAL

BdREN : Infrastructure

- **Transmission equipment to create backbone network**
- **Internet PoPs at all connected Universities (38)**
- **Data Center (DC and DR)**
 - **DC at UGC and DR at BUET**
 - **Storage Area Network with 400 Tera Byte Capacity**
 - **Dual Path Fiber connectivity between DC and DR**
 - **Computing Facility having 480 Core (3.00 GHz), 2304 GB RAM**
- **Video Conference System with Virtual Class Room**
 - **33 Public Universities**



BdREN Data Center



BdREN : Distance Learning Theater

- **Video Conference System with Distance Learning Theater/Virtual Class Rooms at 33 Public Universities**



**Distance Learning Theater at
Bangabandhu Sheikh Mujibur
Rahman Agricultural University**



BdREN : Capacity Building (upto 2017)

- BdREN provides local/foreign training to IT professionals for capacity development
 - 30 no of training have been conducted
 - 1466 no of trainees
- BdREN also conducts awareness programs
 - 11 no of awareness program
 - 1336 no of participants
- Research support funding through TEIN*CC

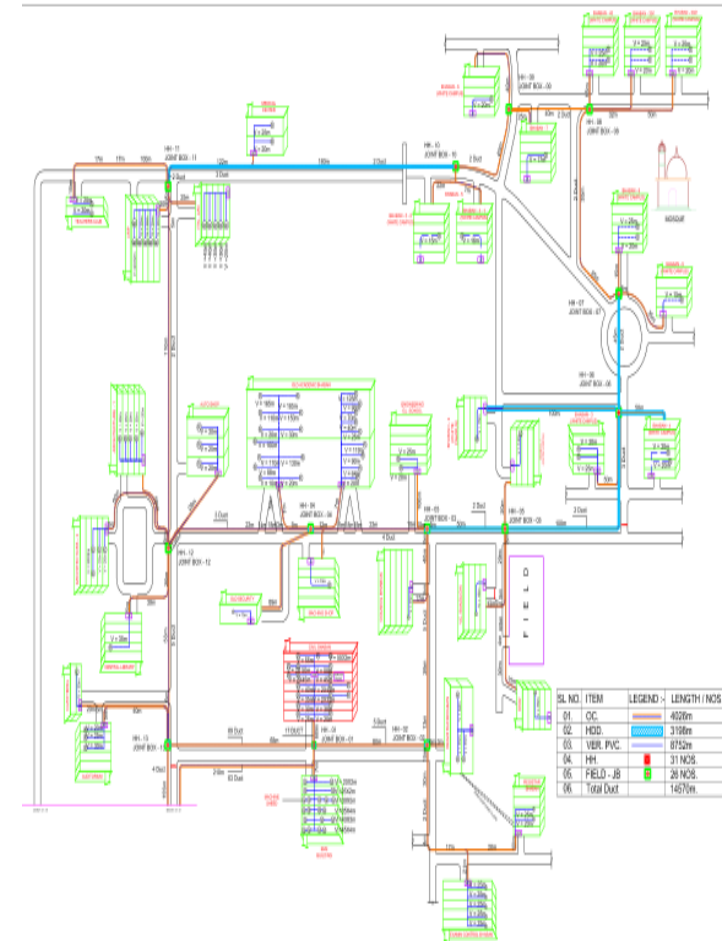


Workshop on Campus Network Security



BdREN Ongoing Activities

- Campus Network at 19 Universities
- Campus e-Presence at 2 Universities
- Expansion of Cloud System and Establishment of new DR center
- 1G connectivity to
 - 12 medical colleges
 - 3 Universities
 - 10 Research Institutes
- Application development
 - Research Gateway
 - Distance Learning Education Framework



**Optical Fiber Network Design for
BUET**



BdREN Cloud Services

Cloud Resources

24 Blade Server

Storage

Network

**20
Core/server**

**96 GB
memory /
blade**

**200 TB in
DC**

**200 TB in
DR**

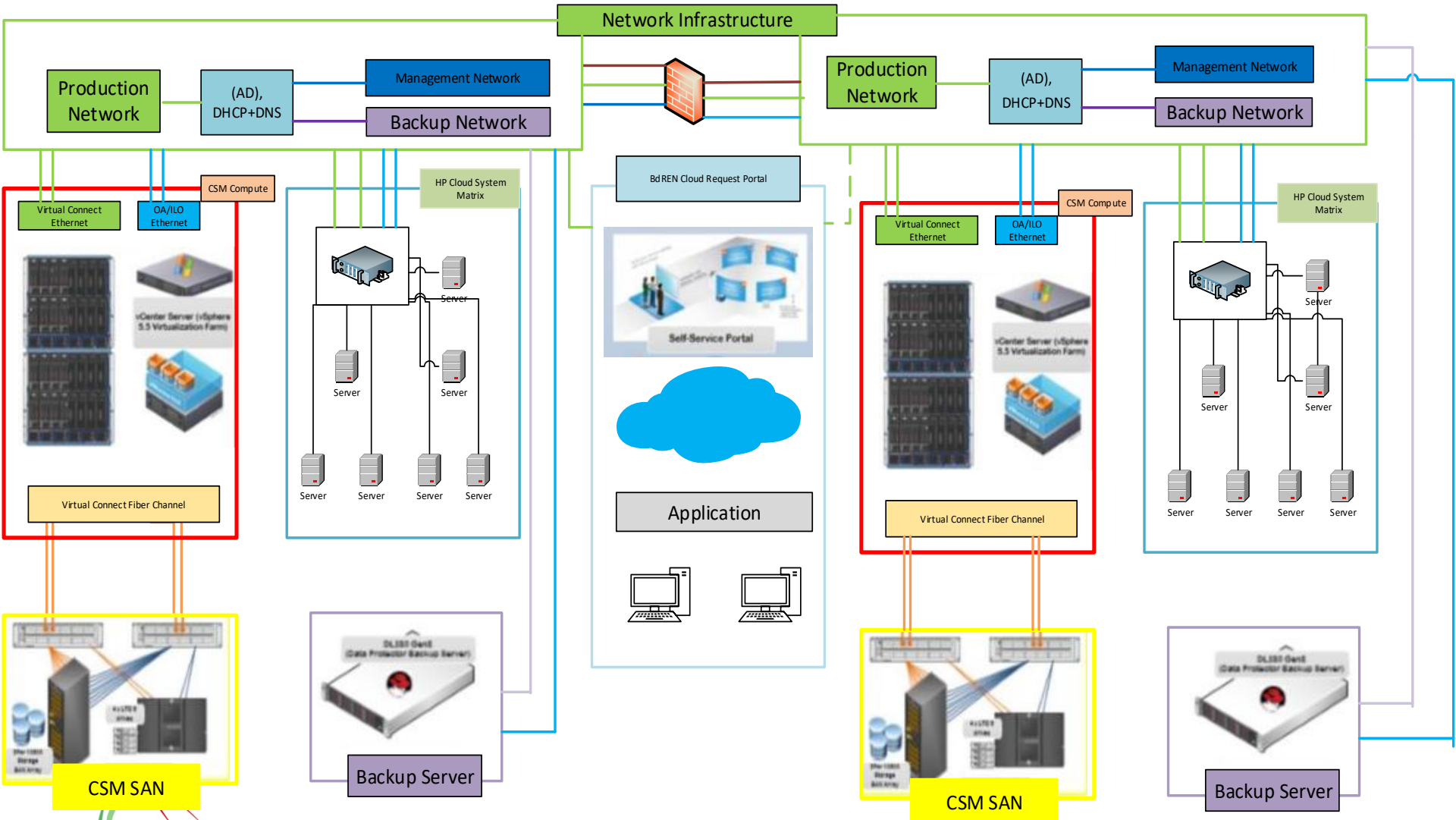
10G



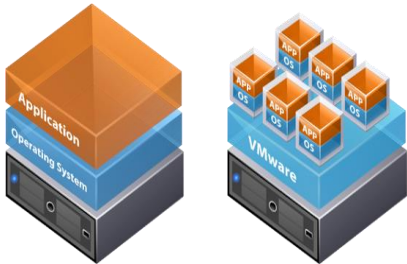
UGC Primary Data Center

BdREN IaaS Solution Infrastructure Overview

BUET Disaster Recovery Center



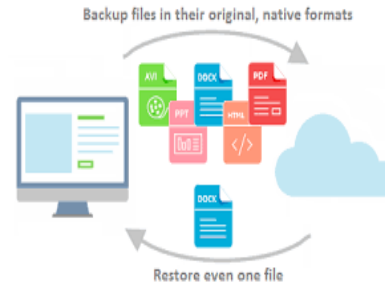
BdREN Cloud and Hosting Services



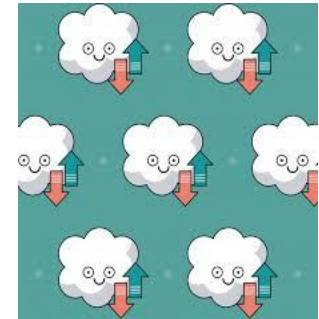
Virtual Machine



Hosting Service



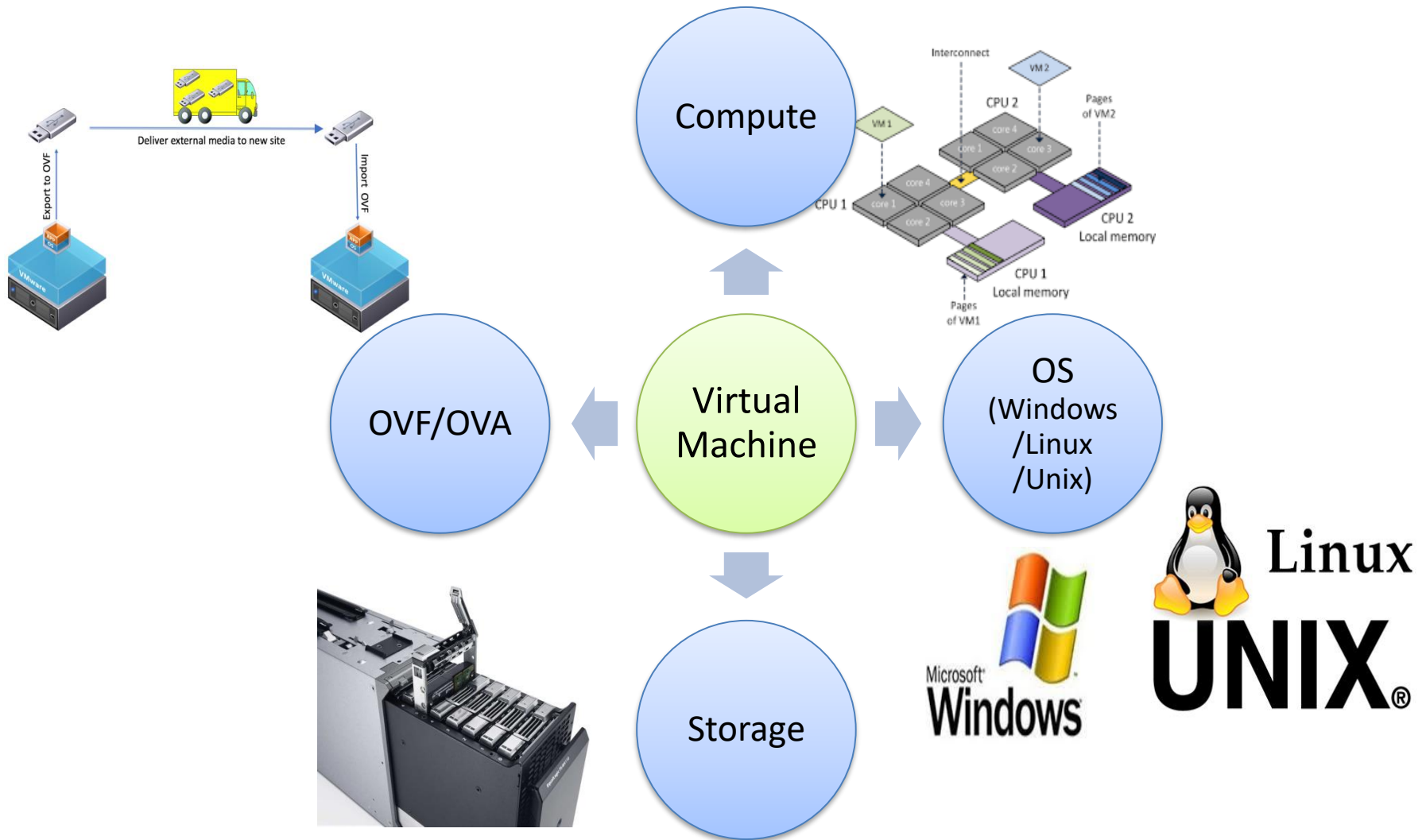
Backup /
Restore
Service



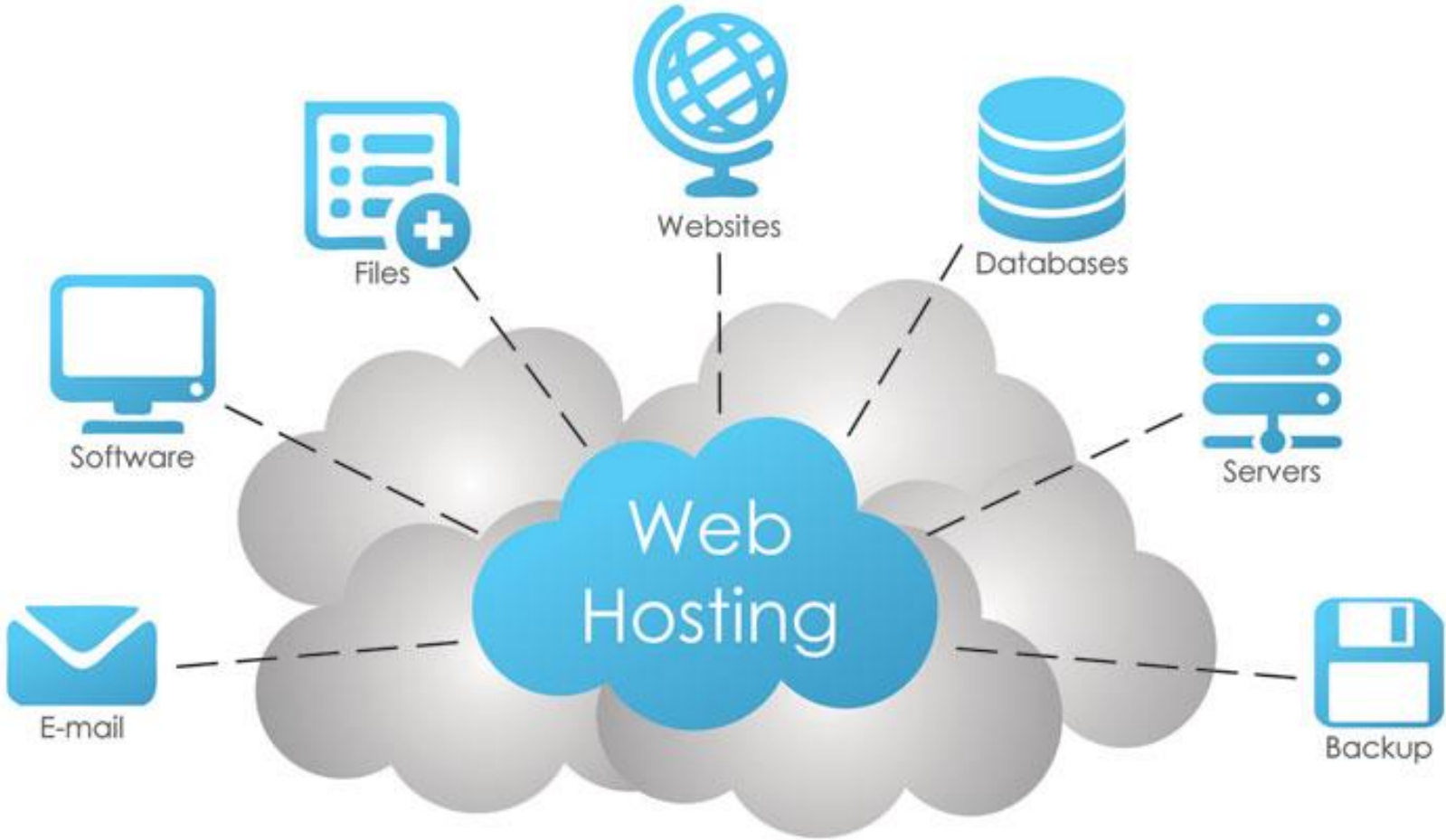
Storage Service



BdREN Cloud and Web Hosting



BdREN Cloud and Hosting Services



Cloud Services

Services BdREN offer

Hosting

**Virtual Private
Sever (VPS)**

**Educati
onal
Storage**

**University
Sites**

**Content
Management
System (CMS)**

Email

**Special
Computing**

**Lab
Environment**

Backup Data



Cloud Services

Services You may Think of

Hot standby

VLE Hosting

Desktop Video Conferencing

Live Streaming

Website failover

Virtual Learning Environment

Low-latency, HD VC

Portal Based Streaming for Events



Other Special Services

EduRoam

Federated Identity

Educational Roaming

Access & Authorization

Single
Username &
Password

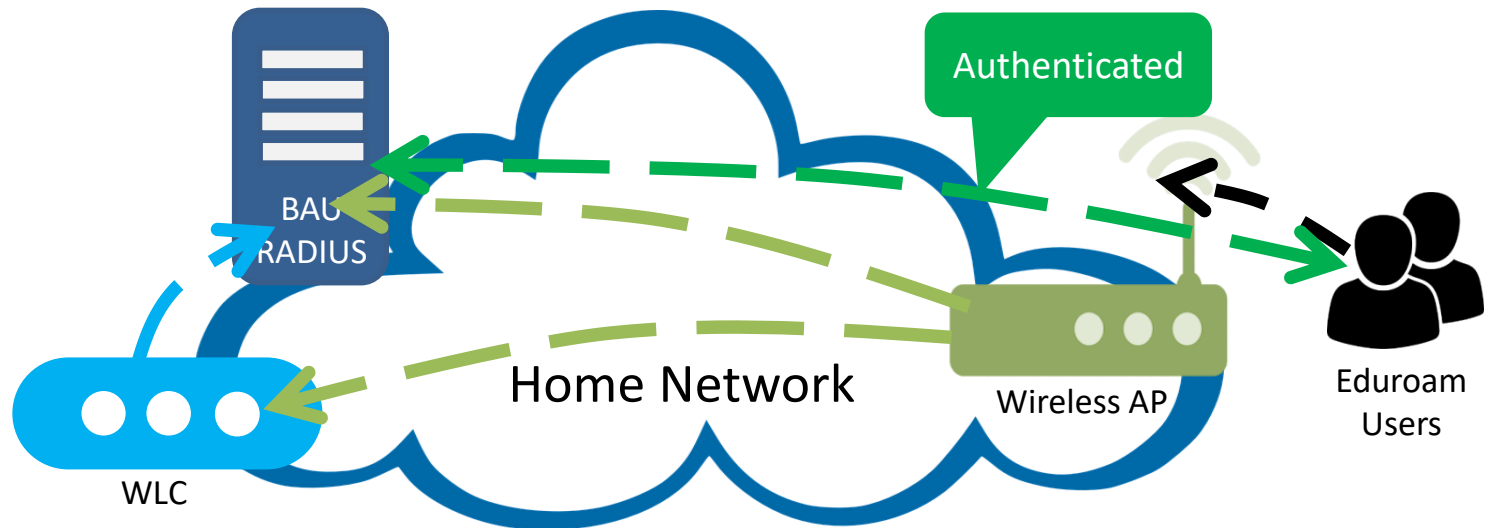
Works with any
REN institute

Trusted
Partners

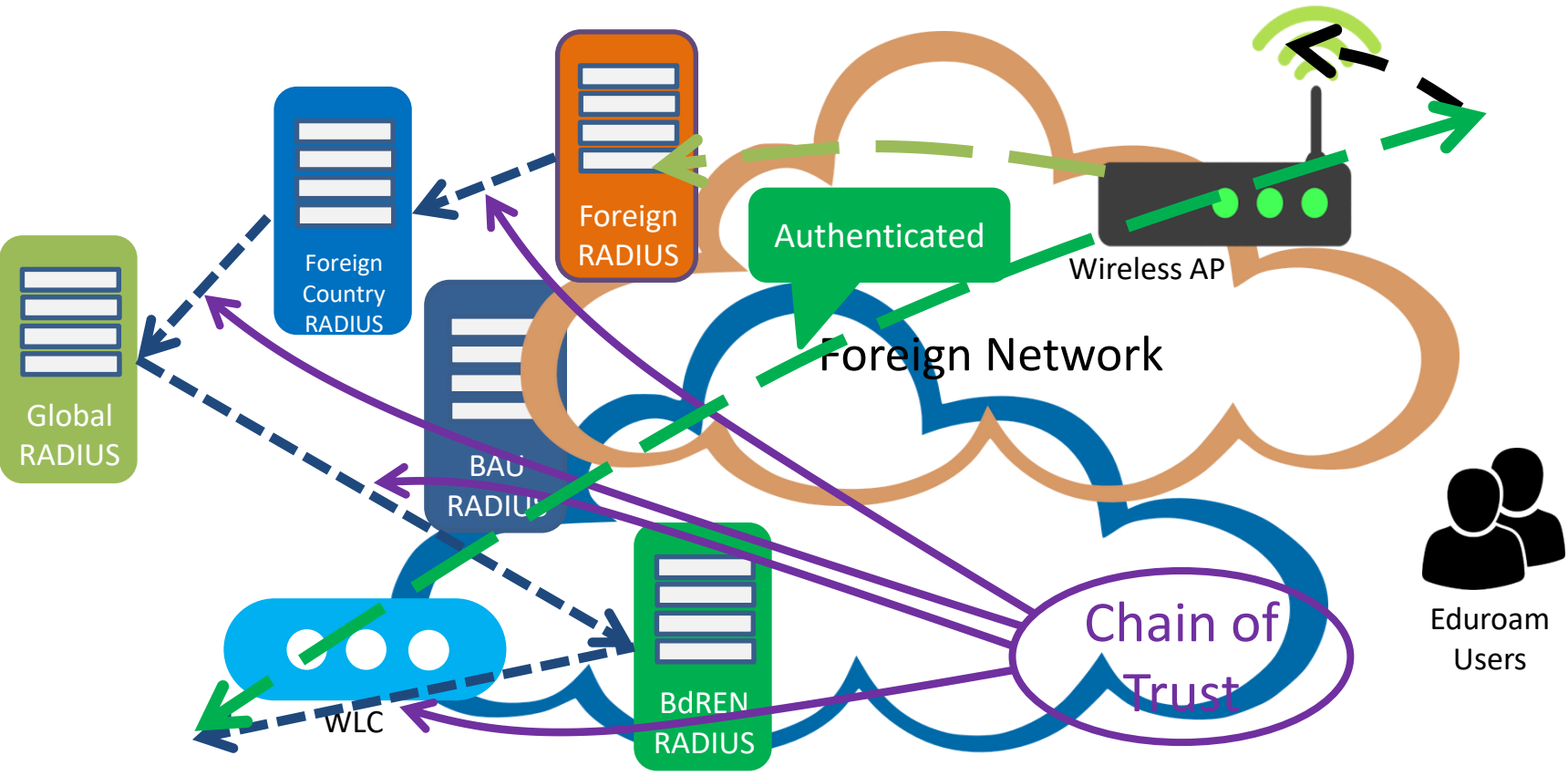
Access to
Resources



Connectivity Flows of EduRoam



Connectivity Flows of EduRoam



Present Infrastructure at a glance

Infrastructure

Backbone

Lastmile
Connectivity

Endpoint
Connectivity

Distance
Learning
Theater

Cloud Computing

3200 km
OPGW

300 km
Underground
Fiber

Public
Universities:
34
Private
Universities: 2

33 Public
Universities

Data Center at
UGC

Disaster
Recovery
Center at
BUET

Applications and Services at a glance

Applications & Services

Internet
Bandwidth

Distance
Learning
Theater

Cloud
Computing

Others

Redundancy
7x24 NOC Services
Service Level
Agreement

All Public
Universities except
BOU

Virtualization
Cores: 480
Storage: 400TB

Capacity Building
Consultancy
Collocation
Hosting
IP Telephony



Capacity Building at a glance

Capacity building

Local Training

Foreign Training

Internship/Exchange
visit

Round Robin

Competitive

On Request



Thank You.

