

# **Criterion 4 - Infrastructure and Learning Resources**

#### 4.4 IT Infrastructure

4.4.2 Institution frequently updates its computer availability for students and IT facilities including Wi-Fi

Documents relating to the updation of IT and Wi-Fi facilities

# **Upgradation of IT and Wi-Fi Facilities in the University during last 5 years (2018-2023)**

Description (IT Facilities)	2018	2019	2020	2021	2022	2023
Data Center	1	1	1	1	1	1
Disaster Recovery Center	0	0	0	0	1	1
Physical Servers	7	7	7	7	14	14
Internet Bandwidth (consolidated)	1100 mbps	1100 mbps	1100 mbps	1100 mbps	1500 mbps	1500 mbps
Desktop Computer in campus	850	919	935	963	1066	1225
Upgradation of Desktop Computer in labs		Desktops in the	ne labs are of Dual core / C	ore 2 duo/ i3/ i5		Upgraded to i3 / i5 / i7
Network (Wired/Wireless) and Security (Endpoint security & Firewalls)	110	120	140	148	171	174
Printers	300	343	373	398	438	490
Projectors	43	55	57	65	85	105
Biometric Machines	23	23	23	23	27	27
Number of Software and Application	13	13	15	15	20	20
Details of Software and Application	1. PTC Creo 3.0 50 perpetual license pack for education purchase 2. MATLAB V8.4 with Simulink 10 user perpetual license 3. Purchase and subscription renewal of Microsoft® Desktop Education	1. PTC Creo 3.0 50 perpetual license pack for education purchase  2. MATLAB V8.4 with Simulink 10 user perpetual license  3. Purchase and subscription renewal of Microsoft® Desktop Education (Dreamspark) All Lng License/Software Assurance Pack Academic OLV	1. PTC Creo 3.0 50 perpetual license pack for education purchase 2. MATLAB V8.4 with Simulink 10 user perpetual license 3. Purchase and subscription renewal of Microsoft® Desktop Education (Dreamspark) All Lng License/Software	1. PTC Creo 3.0 50 perpetual license pack for education purchase 2. MATLAB V8.4 with Simulink 10 user perpetual license 3. Purchase and subscription renewal of Microsoft® Desktop Education (Dreamspark) All Lng License/Software Assurance Pack	1. PTC Creo 3.0 50 perpetual license pack for education purchase WATLAB \$8.4 with Simulink II user giespetual license gurchase and subscription renewal of Microsoft® Desktop Education (Dreamspark)	1. PTC Creo 3.0 50 perpetual license pack for education purchase 2. MATLAB V8.4 with Simulink 10 user perpetual license 3. Purchase and subscription renewal of Microsoft® Desktop Education

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- 8. SMS Services
- 9. Him shikhar Academic and HRMS solution
- 10. Turnitin Turnitin is an originality checking and plagiarism prevention.
- 11. Faculty Feedback System – Inhouse developed.
- 12. Google Workspace for Education Mail Services for University Domain (srhu.edu.in)

product Miracle HIS

13. Legacy Hospital HRMS solution Information System Turnitin is an (HIS), a client server technology-based checking and product running since 2010 upgraded to web browser technology-based

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- 4. OrCAD ® PCB Design University Edition perpetual license purchase
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- 14. Legacy Hospital Information System (HIS), a client server

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- **SMS Services**
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#### **Data Centre and Disaster Recovery Centre (Server & Storage)**

Till the year 2022, we had only one data center, but now in 2022 we have set up 2 Data centers; one as main data center and another as disaster recovery center for high availability of servers/applications etc. which have 14 physical and 32 virtual servers' approx. Earlier computers were standalone workgroup computers. In 2023 we have Implemented Domain environment (AD), and all the computers are getting moved to Domain. This activity started from April 2023 onwards.

#### **Environment**

- HCI solution (Dell VX-Rail)
- Consolidated Memory in the servers (RAM)
   Consolidated Storage in servers
   1,984 GB
   152 TB
- Consolidated Storage in serversWindows Server 2022 Datacenter edition
- MS SQL 2019 server Enterprise were installed
- 24\*7 Online UPS backup supply

# From Oct 2022 onwards One Data Center with 7 Physical Servers Computers were in Work group Two Data Centers with 14 Physical servers Computers are moving to Domain environment

Sr. No.	Details	Year
1	Setup dedicated server for JUNO ERP	2023
2	File server was created as a central repository	2023
3	Application and Database server were created for HIS in-HA	2023
	Mode ∧	
4	Domain Server environment is created	2023
5	High Availability of servers were made at DR site	2022
6	Hyper converged infrastructure was procured and installed 1/3,	2022
7	Dell Storage (EMC NX 3240) of 24 TB purchased	2022
8	Secondary Data Center was constructed (DR Site) Registrar	2022
9	IBM Server (X3650 M4) purchased	2022
10	NAS Storage of WD of 4*16TB purchased	2018-2023

1	11	Purchased Dell R440 * 2 Server + 1 Storage (MD3420) purchased	2018
]	12	Purchased 2 IBM Servers	2013
	13	Dell Servers + Storage	2010







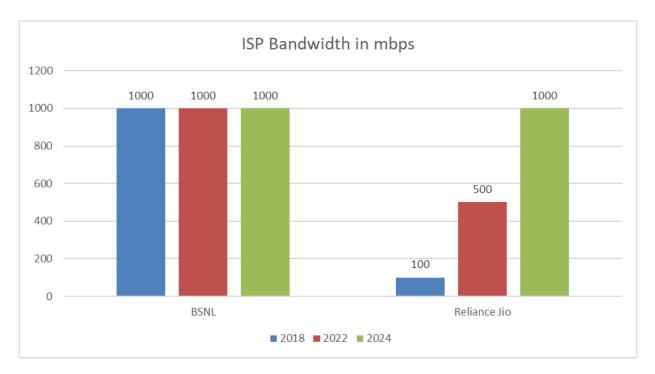
#### **IT Facilities- Internet Bandwidth**

To provide the internet service in the campus, the services are taken from following ISP(s)

- BSNL NKN OFC Link for 1gbps
- JIO OFC Link of 500Mbps upgraded to 1 Gbps
- Airtel FTTH (Fiber to The Home) Service available in employee residential area.

The institute always reviews the current needs and accordingly the internet bandwidth isupgraded from time to time.

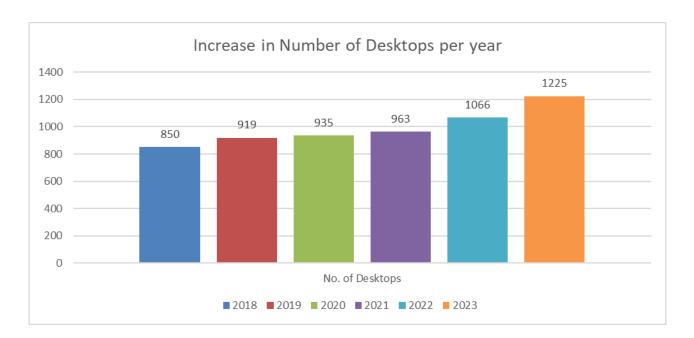
NKN BSNL & Reliance JIO is the main ILL service provider in the organization. NKN BSNL at 1000mbps and Reliance JIO at 500mbps. Earlier bandwidth 100mbps of Reliance JIO upgraded to 500mbps in 2022 and now again being upgraded to 1000mbps affective from Jan 2024 onwards.





#### **IT Facilities- Desktop Computer in Campus**

The university always focus on latest configuration and accordingly new desktops are purchased. Recently 600 desktops with latest configuration (i3 with 8GB RAM, 256 GB SSD and window 11) were purchased for replacing the outdated computers. In the year 2018, we had around 850 computers in the premises and in the year Oct 2023 our computer has reached to around 1225.



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#### **Desktop Computer in labs for student**

Desktop with latest configuration is preferred in lab for student. Desktop in engineering student computer labs upgraded from i3 to i5/i7 with 16 GB RAM and 1 TB SSD in 2023 and Window 10 to Window 11. All labs are having internet facility through LAN for student.

# Till June 2023

• less than i3/i5 processor based Computers

#### Computers Upgraded

### In Dec 2023

• All labs have min i3/i5/i7 processor based computers

Sr. No.	Software	Year
1	Procured Adobe CCT-All apps education named 4 Licenses	2023
2	Adobe acrobat pro DC 10 Licenses	2023
3	Microsoft office Standard (750 Licenses)	2023
4	Microsoft Cals (600 Licenses)	2023
5	Purchased MS SQL 2019 server Enterprise	2022
6	Kaspersky Endpoint Security for Business	2021
7	Purchased Vmware vshphere	2019
8	Corel draw graphic suite	2017 & 2019
9	Purchased Ms office 2010/2013 / used open office	2004-2017

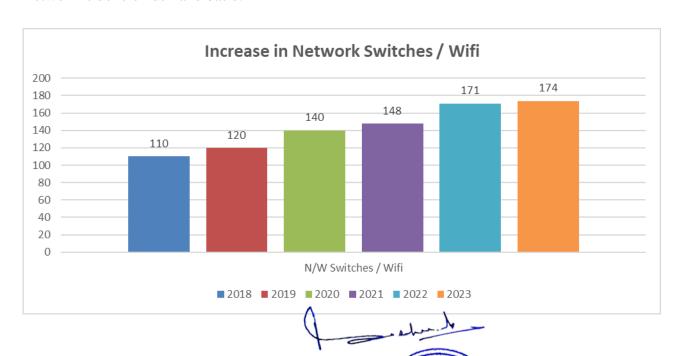


# IT Facilities- Network (Wired/Wireless) and Security (Endpoint security & Firewalls)

Whole IT infra-Network is secured & controlled by Kaspersky endpoint security and Sophos XGS 3300 Firewall. In 2018, we had Cyberoam firewall which was replaced with Sophos 310 in2020 now we have replaced these Firewalls with higher end model XGS 3300 in Oct 2023. We have 2 firewalls which are working in High Availability.



**Network and Security -** SRHU Campus is well connected with Fiber/LAN/Wi-fi. Under the network upgradation and optimization project, whole Network Switches are connected with 10G at the backend and 1G access layer speed. Around 35+ km long network and 10+ km optical fiber was laid and also organization is moving to enterprise grade network switches. Network switches are increased from 100 as of 2017 to 174 as of now. The university is providing wireless network in only selected areas and 50 Access Points are installed. Temporary arrangement of wireless network is done on demand basis.

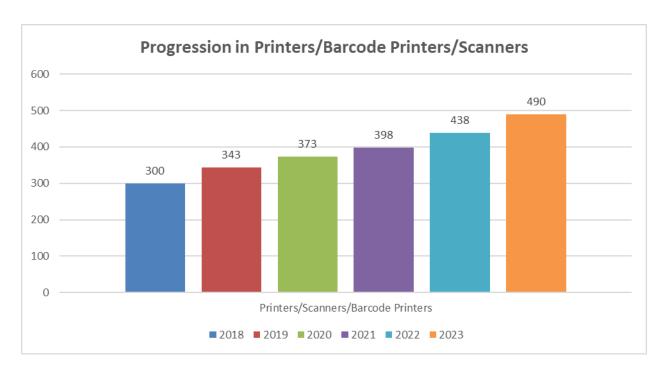


Sr. No.	Details	Year
1	Upgraded the existing network to Ring topology via Fiber	2023
2	DC to DR connected with 12 Core fiber 40gbps ring	2022
3	Connectivity upgraded with 12 Core Fiber on 10G backend	2022
	connectivity	
4	Multiple buildings (Main gate, CRI,mto etc.) were connected to	2022
	Data center via 6 Core fiber	
5	Multiple departmental office was connected via end user CAT	2018-2023
	6 connectivity	



#### **IT Facilities- Printers**

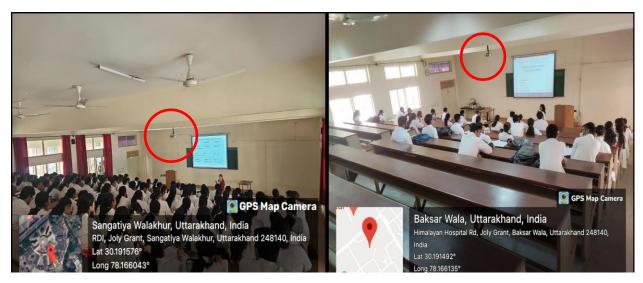
In 2018, we had around 300 printers/barcode printers/Scanners in the premises. Now the number has increased to 490 approx.



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#### **IT Facilities- Projectors**

LCD projector with Internet facility in classroom, Lab, conference room, seminar halls. 60+ more projectors added in inventory in the last four years.







#### **IT Facilities- Biometric Machines**

Till 2018, 23 Star link biometric machines (Finger) were purchased which were upgraded to AI enabled Face scan Biometric machines in May 2022 (22 machines were purchased) and Aadhar enabled biometric machines, total quantity 5 (PRECISION PB ABAS-100 LAN) purchased in year 2022 and one (Matrix Cosec Vega FAXQ aadhar enabled Biometric device) in 2023

## Till April 2022

•Till April2022, 23 Starlink Biometric machines (Finger punching) were used in campus

#### 2022

- Upgraded to Facial Recognition based 22 Biometric machines
- •Adhar enabled

#### 2023

 one (Matrix Cosec Vega FAXQ aadhar enabled Biometric device) in 2023







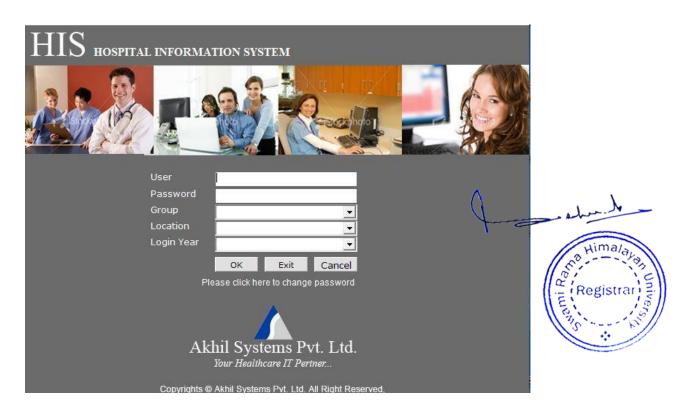
#### **Software and Application**

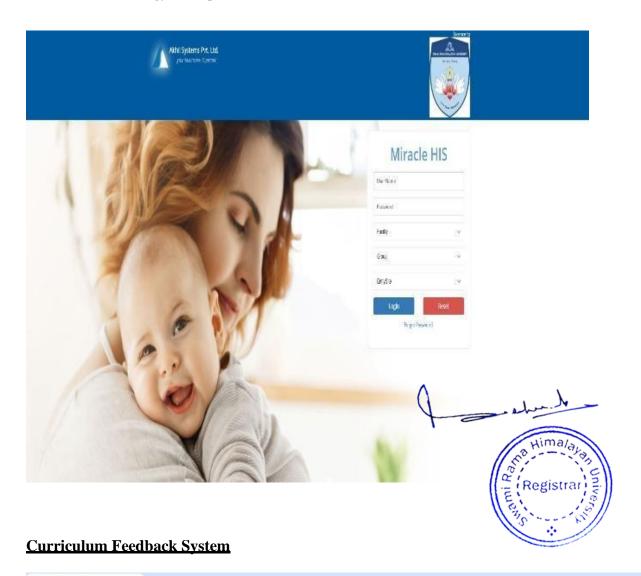
Sr.	Software	Year
No.	PTC C 2.0.70 (11) 1.6 1 ()	2017
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2	purchase  MATI AD V9 4 with Simulials 10 year normatival	2015
<i>2</i>	MATLAB V8.4 with Simulink 10 user perpetual license	2015
3	Purchase and subscription renewal of	2018 - Till date
3	Microsoft®DesktopEducation (Dreamspark ) AllLng	2010 - 1111 uate
	License/SoftwareAssurancePack Academic OLV	
	1License LevelE Enterprise	
4	OrCAD ® PCB Design University Edition perpetual	2015
	license purchase	
5	IBM SPSS Statistics Base 22.0 10 users perpetual	2013
	license purchased	
6	Autodesk AutoCAD 2014 5 users perpetual license	2013
	purchase	
7	AutoCAD 2020 - Education Network/Multi-	2017-2022
	user/Installation on network server shareable by up to	
	3000concurrent users	
8	AutoCAD commercial 1 user for research work	2023
	purpose	
9	Words Worth Senior English Language Lab License	2017 to 2022
10	Language Lab software Orell Talk Pro Version	2023
	(Lifetime	
	Perpetual License)	
	For 1 Teacher upto 60 Student Consoles and 500	
11	Users  Constant Claud Consta Washington Constant	2020 – Till date
11	Google Cloud- Google Workspace Teaching & Learning Upgrade 50 Licenses for Education	2020 – Till date
	Purchased for the Srhu.edu.in Domain	
12	SMS Services	2018 – Till date
13	Himshikhar – Academic and HRMS solution	2018 - 2022
14	JUNO – A complete academic ERP solution	2023
15	Sage Pocket HRMS solution	2022 – Till date
16	NoPaperForms (merrito) Academic CRM and Pre-	2022 – Till date
	Admission solution	
17	Turnitin - Turnitin is an originality checking and	2018 – Till date
	plagiarism prevention.	
18	Faculty Feedback System – Inhouse developed	2018 – Till date
19	Curriculum Feedback System – Inhouse developed	2023 – Till date
20	Google Workspace for Education Mail Services for	2015 – Till date
	University Domain (srhu.edu.in)	<b>)</b>

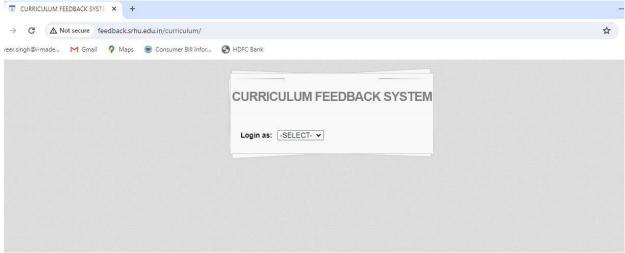
21	Upgraded Tally Multi User to Tally ERP Gold On- premise Server License	2021-Till Date
22	Legacy Hospital Information System (HIS), a client server technology-based product running since 2010 upgraded to web browser technology-based product Miracle HIS in 2022	2010 – Till date
23	Augnito Voice to Text Cloud Based Medical Software for 10 nos License	2022-Till Date
24	Web Server - High-end Godaddy VPS Server (Linux CentOS with cPanel/WHM) server purchased and whole deployment from old web server migrated to new web server	2022

#### **Hospital Information System (HIS)**

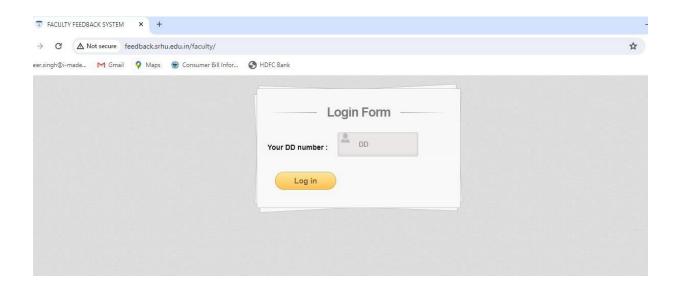
Client-server technology-based product till Feb 2022



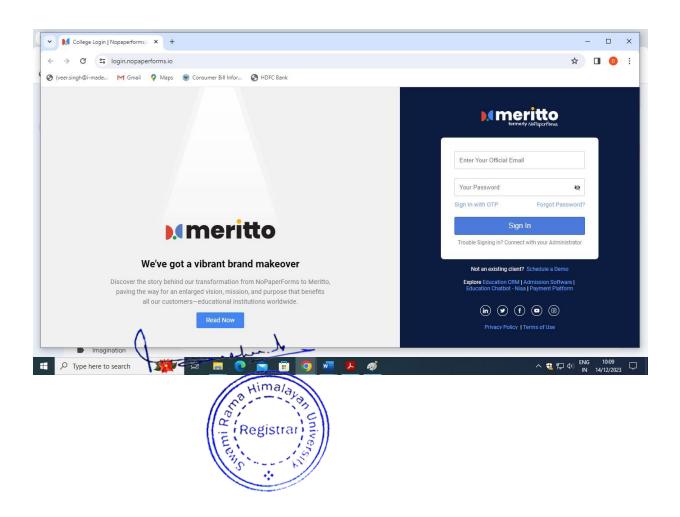




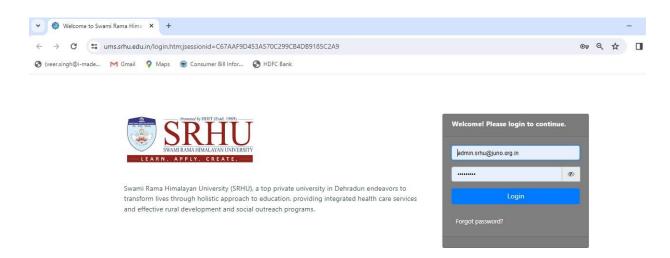
#### **Faculty Feedback System**



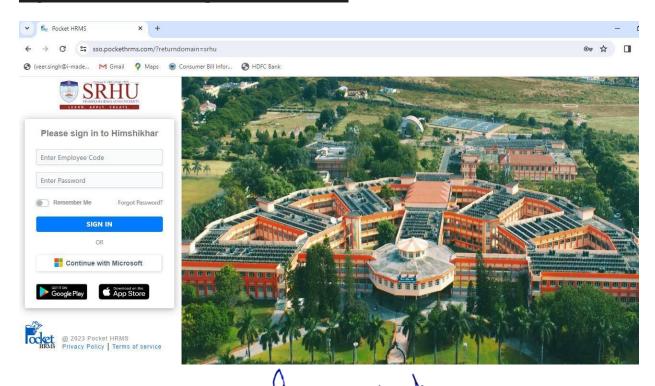
#### No Paper Forms (merrito) Academic CRM and Pre-Admission solution



#### JUNO - A complete academic ERP solution

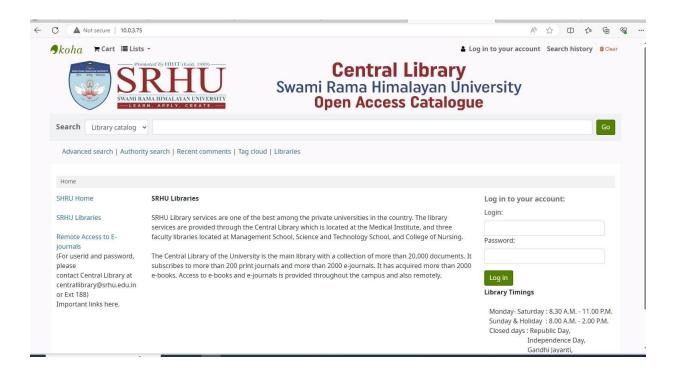


#### Sage Pocket HRMS, A complete HRMS solution





#### KOHA Library Management System (Open Source)



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