KOTTAKKAL FAROOK ARTS & SCIENCE COLLEGE INFORMATION AND COMMUNICATIONS TECHNOLOGY

Narrated By

ANAS C

(System administrator)

Date: 05/03/2024

Index

KFASC INFORMATION AND COMMUNICATIONS TECHNOLOGY

1) Digital Library

A well-equipped and furnished Digital library that provides access to the Internet for students to gain additional knowledge and communication which is configured with the help of LIGS (LN – X1), PC with high-speed internet connection. It works with the help of 32 computers so that all the students and teachers in the college can use it for internet browsing, downloading, and other academic activities.

Internet resources such as Inflibnet and National Digital Library (NDL) can be accessed from here as needed. The college's Digital Repository Service (Dspace), ERP software, and Online TCS can be also accessed from here and have printing facilities. Internet access is controlled by an open-source firewall IP Fire and the power supply to the digital library is controlled by a 10 kVA online UPS system.

- o The Internet connection is provided through the proxy username and password for all users
- o We installed three manageable, reliable, and faster-branded PC LIGS (LN – X1) for installing Multicast server software
- o Installed and configured LIGS (LN – X1) Multicast device in 15 client systems.
- o All computer systems run in the Windows 10 and Windows 11
- o Provided KERALA VISION internet connection with 50 Mbps bandwidth with a standby of dedicated lease line connection from BSNL 40 Mbps.
- o Installed an IP Fire proxy server and Configured IP Fire proxy in all Client systems for filtering and monitoring internet usage.
- o The Internet connection is provided through the proxy username and password for all users
- o Un-interrupted Power supply with the backup of 10 KV Numeric UPS with 16 batteries and standby of 35KV Generator
- o PC Specifications Processor:(intel i3/Pentium processors) RAM : (4GB) STORAGE : (SSD/HDD)

IP fire proxy server details
The IP fire is installed in the Oracle virtual box.
Username: root
Password: 12345
For monitoring the firewall have a web console with authentication

Link: https://192.168.20.1:444/cgi-bin/firewall.cgi#
Username: admin
Password: 123456

Each user in the digital library should create an account to use the services
Steps:
1. Open IP fire web console
2. Network → Web proxy → user management
3. Type the username, and password and create an account

*username is the user id

*password minimum 5 &maximum 8 character

Users can change the password through a specified link which is bookmarked in Mozilla Firefox.

Link: http://192.168.20.1:81/cgi-bin/chpasswd.cgi

The internet options Connections or Browser Mozilla Firefox configure as manual proxy settings for all ports

HTTP Proxy: 192.168.20.0   Port No: 800

Document to print/ Copy to USB

Due to security reasons direct printing /copy from USB are prohibited in Digital Library. Instead of this purpose some folder is shared and mounted from the library. Users can copy and paste the document to this folder. After that, they can get the document to the USB/Printed copy as usual with the permission of library staff.

Shared Folder Details

IP Address: [192.168.20.17](192.168.20.17)

Technical Details

Total NO of Nodes: 34

Internet Bandwidth: 50 Mbps

Firewall   : IP Fire

Operating system   : Windows 10, Windows 11

Technologies used   : LIGS (LN – X1), Proxy server & Squid Proxy for access control

Network Address   : 192.168.20.0

Software installed   : MS Office, Browsers, Python, Tally

1) Library

The book transfer and collection system works with the help of library management software called Book Magic. A Barcode scanner ,barcode printer (TVS NEO) ,OPAC, USER ENTRY Scanning PC and are equipped here and the Library offers reprographic services and is equipped with the most modern machine Ricoh MB2014D a high-end printer with a scanner.

Technical Details

Total NO of Nodes   : 5

Internet Bandwidth   : 40 Mbps

Firewall   : Pf sense & IP Fire

Server   : Dell Server

Operating system   : Windows7, Windows 10, Windows 11

Technologies used   : Barcode Scanner,Proxy server & Squid Proxy for access control

Network Address   : 192.168.1.0 ,192.168.20.0

Software installed   : MS Office, Browsers, PDF Reader & Book magic

1) DSPACE

DSpace is most often used as an institutional repository - a platform that provides access to research output, scholarly publications, library collections, and more. DSpace preserves and enables easy and open access to all types of digital resources. The D-Space is designed to be used by students both on and off campus.

Technical Details

Inside link   : 192.168.1.7:8001/jspui

Outside Link : dspace.kottakkalfarookcollege.edu.in:8001/jspui

19)   Library User Entry Scanning System

Technical Details

Scanning PC : i3 Processor, 4GB RAM, 128 SSD , 27' Monitor

Scanning Software : Book Magic-User Entry Log

Barcode Scanner : TVS BS-i302 g

19)   library OPAC System

Technical Details

PC : i3 Processor, RAM 4GB , 128 SSD , 27' Monitor

OPAC Software : BookMagic

19)   Language Lab

Technical Details

Server PC : Dell OptiPlex 7040

Total NO of Nodes   :34

Software :English Cloud

Access Link : languagelab/

2) Computer Lab

We have a sophisticated computer lab for UG students with the help of 32 computers. In addition to that, the Centre has an internet connection with a dedicated bandwidth of 50 Mbps. Internet access is controlled by an open-source firewall IP Fire. The Computer Lab is also equipped with programming and application software like c, c+, Net, VB, Python, and MS Office. The computer lab is designed to conduct online tests. There is also an LCD projector to show things bigger and the power supply to the digital library is controlled by a 10 kVA online UPS system, This UPS system allows the computer to run without power interruption for up to 6 hours even when there is no Electric supply.

Technical Details

Total NO of Nodes   : 35

Internet Bandwidth   : 50 Mbps

Firewall   : IP Fire

Operating system   : Windows 7/Windows 10

Technologies used   : Proxy server & Squid Proxy for access control

Network Address   : 192.168.20.0

Software installed   : MS Office, Browsers, c, c+, Net, VB, Tally and Python

3) PG Computer Lab

The lab is equipped with 6 nodes of Desktop computers using one high-end Dell OptiPlex 7040 computer with the help of virtualization technology called N Computing. The backbone of the technology in the PG lab is N Computing Desktop virtualization. This Computer lab is equipped with the most secure, reliable, and faster branded one PC Dell Optiplex7040 and 6 i3 Desktop PC

Installed and configured N Computing X550 v space device in 5 client systems. Installed and configured Canon 2900b to print to all nodes to get the output of the programs in printed form for the lab sessions. The Lab has a reliable power supply with the backup of 1 KV Power Guard UPS and 35 KV generator,

Technical Details

Total NO of Nodes   : 12

Internet Bandwidth   : 40 Mbps

Firewall   : pf sense

Server Model   : Dell OptiPlex 7040

Operating system   : Windows7,Windows 10

Technologies used   : N-Computing Virtualisation, Proxy server & Squid Proxy for access control

Network Address   : 192.168.1.0

Software installed   : MS Office, Browsers & Python

4) Digital Signage System

This system is designed to keep the students informed of the institution notifications and examination seating arrangements promptly. Its software works in such a way that it can be managed from anywhere using the Internet. It was developed by Kottakkal-based software firm named Datastore. This software allows us to set slides based on time schedule in all three formats of image, video, and text as needed. We use 65 inch TCL Smart TV with the help of a computer to run this software.

Access Link   : tv.kottakkalfarookcollege.edu.in

Console Access: tv.kottakkalfarookcollege.edu.in/login

5) Card Printer

Data card SD360 model card printer is used to print ID cards in PVC card format with the help of ERP software Online TCS for students and staff.

Machine IP: 192.168.1.202

ID Cards can be generated from: Online TCS → Reports → Academic reports → Staff ID / Student ID Card

---

6) Internet & Intranet

Our college is fully equipped with round a clock internet facility with a speed of 90 Mbps, in collaboration with BSNL networks and Kerala Vision, and an additional standby network on 30mMbps BSNL. Wi-Fi facility is available for all staff and students WIFI speed of 300 Mbps Airtel Xtream Connection. Connectivity is available to every department from the Server room. All Computer Laboratories are connected to the internet through Switches. IP Fire and PF Sense Firewall Control are used for network availability and security. Proxy servers manage unauthorized access to the network. We have fixed public IP addresses to access many internal server applications from outside the campus. The high-end networking devices provide simultaneous access to the servers to many users in addition to other users from the Digital library and computer lab through the campus network. Since all the Computer Systems in KFASC are connected to the campus network, one can access any resource from any node on the campus. A variety of software is also made available to the students and users. The current backbone of KFASC campus networks is 1 Gbps, and optical fibers 1 Gbps link has been connected to every institution within the entire Campus, reaching 100% installed base.

Ethernet 1 Gbps link has been connected to every desktop system inside the campus, providing high-quality network services

Technical Details

Internet Service Providers   :BSNL,Kerala Vision,Airtel

Bandwidth   : BSNL 40 Mbps(NMB) , Kerala Vision 50 Mbps, BSNL (Stand By) 30 Mbps and Airtel 300Mbps

Firewall   :PF Sense

Technologies   : Proxy server, DHCP, NAT,

Public IP   : 59.96.63.61 (BSNL)

Network Address   : 192.168.0.0/22

The Internet Options Connections configure as manual proxy settings for all ports

HTTP Proxy: 192.168.1.1

Port No: 3128

---

7) Storage Solution

The NAS (NETWORK ATTACHED STORAGE) facility is available on campus to help secure office-related data transfer and easy access, keeping our files safe in a single place on this high-performance.

Network Attached Storage (NAS) devices can access it from anywhere with a network connection. It can easily customize how you share by using public or private shares. With a public share, the content will be exhibited to all. Using a private share, you can grant a user limited or full access and securely collaborate with anyone. We use My Cloud Expert Series EX2 Ultra with a total capacity of 8 TB in two 4TB HDDs (It has 4TB of usable space due to the use of RAID 1 technology, RAID helps to keep Data safe if there is any physical damage to any HDD)

Access Link   : 192.168.1.220

8) ERP Software

KINFRA-based software company Meshilogic has developed "Online TCS", an ERP software that plays a key role in implementing campus automation. It enables student registration, admission, fee management, timetable management, and student &staff attendance management and provides ID cards for all inmates of KFASC. Online TCS is designed to be used both inside and outside of the campus. The Software is cloud-based Application.

Technical Details

Web Access link : tcs.kottakkalfarookcollege.edu.in

9) Smart classroom

About 100 percent of the college's classrooms are designed as smart classrooms. Teachers can use an Android Smart TV in classrooms by wirelessly connecting their laptops and smartphones via screen mirroring or casting, allowing a seamless display of content. This setup offers improved display quality and built-in sound for an enhanced teaching experience. In addition, smart classrooms have been designed with reliable power backup and good ventilation and space.

Technical Details

- o Android Smart TV   - 20 Nos
- o Internet   -300 Mbps (Airtel Fiber Network)

10)   Seminar room

The college has a well-furnished adequately spacious and magnificent Seminar Hall with a sitting capacity of 100 students at a time. The Hall is well equipped with all facilities like an Interactive panel, audio-visual aids, amplifiers, Wi-Fi, and AC .

Technical Details

- o Senses 75' Interactive Panel (Windows and Android)
- o Surrounding Sound systems work with wireless table mount, pocket, and hand Mics
- o Numeric 10KV Online UPS Power supply with backup of 35 KV generator.
- o Computer System with necessary peripherals.
- o TP-Link EAP 225 Wifi Access Point

11)   Biometric Attendance System

Biometric time and attendance systems use the fingerprints or faces of employees to verify who is actually clocking in and out of work each day. The system scans the finger or face of the employee. We have two machines to record employee attendance both work simultaneously and transfer attendance data in short intervals to the server. We have the license capability to add an unlimited number of devices and users. The biometric attendance reports can be retrieved from anywhere through a campus network system. Admin has the special privilege to add/remove users from the system also office staff can view reports through assigned credentials.

In all departments, a biometric system has been introduced to track attendance and timing. Faculty attendance can now be efficiently monitored using ESSL software.

Technical Details

Manufacturer   : ESSL

Total Nodes : 10

Model   : Uface 302, K90 pro

Mode support   : Fingerprint, Face, RFID Card

IP Address   :192.168.1.201 to 213

Network Access link: 192.168.2.55

12)   Surveillance system

With the help of 6 DVR and 4 NVR 120 IP/Digital cameras the campus is under 24 x 7 CCTV surveillance. All the major points on the campus are closely monitored and the data is stored for Three weeks' time. This surveillance system ensures that students go in line with the code and conduct of the college and avoids unhealthy situations. It is also helpful to find lost valuable items.

13)   EPABX System

Campus EPABX system helps to handle internal and external telephone communication between staff. The current system has a maximum installation capacity of 28 stations. Currently, the intercom system runs on 27 of these stations. both incoming and outgoing calls are supported across these every stations.

Technical Details

EPABX :Neos 3s

Total Station :28

Running Stations : 27

14)   Google Workspace

Campus Provide Institutional E-mail Accounts for all inmates, in association with Google Apps for Education from Google. Google Workspace, formerly known as G Suite is a collection of cloud computing, productivity, and collaboration tools, software, and products developed and marketed by Google. I Enclosed

a file containing the details of the entire user, G Suite for Education accounts provide 10,000 user licenses. You don't have to remove inactive users. Each user has unlimited storage for Google Drive, Gmail, and Google Photos. If there are 4 or fewer users in your organization, each user gets 1 TB of storage G Suite for Education is free to qualified educational institutions. We are now qualified to use these services associated with our domain *kottakkalfarookcollege.edu.in*

Verified Domain: kottakkalfarookcollege.edu.in

Admin Account: admin@kottakkalfarookcollege.edu.in

15)   Auditorium

A well-equipped auditorium with seating for over 800 people serves as the venue for the regular conferences. The seminar hall is spacious, well-ventilated, and furnished halls. It also offers facilities such as LCD Short throw DLP projector, down projector screens, and white-boards for delivering lectures and seminars in addition that also equipped with High-quality sound systems and WIFI facilities

Technical Details

Projector   : Epson Projector

Wi-Fi   : Access point Tp Link EAP225

Sound Mixer: 1) 16CH Mixer

*   2)Stranger 8CH Mixer*

Amplifier   :   1) VTech 1200w Power amp

*   2) Ahuja 160 w Normal Amp*

Speaker   :   1) SP2 Speaker 4 Nos

*   2)30 Watt Speaker 6 Nos*

*   3)10 Watt Speaker 2 Nos*

*   4)Studio master 300 Watt Speaker with In-built Amp 2 Nos*

MIC   :   1) Wired Mic 2 Nos JTS

*   2) Wireless mic AHUJA 2Nos*

*   3)Wired Mic 1 Nos AHUJA*

18)   Office

The College Office has the capability of 5 highly configured desktop PCs with a dedicated Internet connection via a 24 port gigabit switch in addition to that there is a Wi-Fi access point to ensure uninterrupted network access, and four printers connected to these desktops, two of them are Canon LBP 2900 and the other one is SAMSUNG LM. the office is also equipped with a Brother color printer integrated with the scanner and the RICO MD2014 high-end A3 photocopier also with the scanner. The Exam management and Inventory management software's server are also on Office PC (192.168.1.101) which is located in the office all computers included in the office are directly connected to this server

Software Installed: Exam Management, Inventory management, MS Office, Document Viewer and Internet browsers

Software Server IP: 192.168.1.101

Access Point: 192.168.2.2

Thermal Printers: Canon LBP 2900 - 2 Nos, Samsung ML 1610

Colour Printer: Brother inkjet Laser colour printer MFC DCP-J100

Photocopier: RICHO 2014d A3 Printer

Scanner: Brother MFC DCP-J100, RICHO 2014d

Dot Matrix Printer: TVS MSP 250, Epson LX310

NAS Share: \\192.168.1.220 or [\\FASC-STORAGE](\\FASC-STORAGE)

20)   E-Content development centre

With E-Content development centre, the college has planned and designed to establish a full-fledged media studio. The facility available in the studio can also be shared with the college faculty members for academic purposes like recording e-content, editing documentary videos, dubbing, and upload and sharing it through various platforms, we are providing 65' SENSES Interactive intelligent panel integrated with Core I5 7th Gen Computer to create e-contents in addition to that a 40' Digital Prompt display and Spotlights are equipped there and also providing Canon EOS 200D Mark II with 32 Gb 100Mbps SD Card to capture visuals and audio in high quality .The studio is further equipped with a soundproof roof, air conditioning (AC), and a sound system to ensure optimal recording conditions and comfort for users.

Technical Details

Interactive panel: SENSES IV 651V2000

Camera: Canon EOS 200D Mark II

21)   Annexe Room

22)   Exam Room

The Exam Control Room is well-equipped   to ensure the smooth and secure conduct of examinations. The primary focus is on printing question papers for various University Internal and External examinations. The room is equipped with three high-performance, multi-functioning printers to efficiently handle the printing of question papers. The entire exam room is under constant CCTV surveillance to prevent any unauthorized access or tampering with examination materials. A robust and high-performance computer system , facilitates the secure storage of examination data, printing schedules, and other essential information. The inclusion of a barcode scanner to manage examination materials. The control room employs secure storage solutions such as Network Attached Storage (NAS) or Storage Area Network (SAN).

IQAC

The IQAC features a streamlined technical infrastructure comprising an interactive panel, two systems, one printer, one scanner, and two UPS units. CCTV surveillance ensures security, while dedicated storage supports

efficient online documentation management, reinforcing the commitment to maintaining high-quality standards in internal quality assurance initiatives.

23) **Server Room-** Highly secure facility housing server with robust processors and extensive storage. It is equipped with Uninterruptible Power Supply (UPS) systems to ensure continuous operation, a firewall for network security, and a neatly organized network rack hosting essential equipment. The environment is air-conditioned to prevent overheating, and access is restricted to authorized personnel, creating a controlled and secure technical area for critical IT operations.

24)   CCTV Monitoring System

The entire campus including Park Area is strategically outfitted with comprehensive CCTV surveillance, providing the principal with a centralized platform to monitor all activities seamlessly. This advanced system ensures constant vigilance, enhancing overall security and facilitating swift responses to any situations that may arise.

25)   Other Technical Details

Currently we have 75 Desktop computers and 7 Laptop systems along with 2 server machines. All these machines are configured and maintained well.