IMPACT: International Journal of Research in Engineering & Technology
ISSN(P): 2347–4599; ISSN(E): 2321–8843
Vol. 9, Issue 2, Feb 2021, 37–52

IMPLEMENTATION OF LOCAL AREA NETWORK (LAN) & BUILD A SECURE LAN SYSTEM FOR BAEC HEAD QUARTER

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Received: 13 Feb 2021 **Accepted: 17 Feb 2021** **Published: 28 Feb 2021**

ABSTRACT

Network security is the process of taking physical and software preventative measures to protect the underlying networking infrastructure from unauthorized access, misuse, malfunction, modification, destruction, or improper disclosure, thereby creating a secure platform for computers, users, and programs to perform their permitted critical functions within a secure environment. A local area network (LAN) is a computer network within a small geographical area such as a home, school, computer laboratory, office building or group of buildings. A LAN is composed of inter-connected workstations and personal computers which are each capable of accessing and sharing data and devices, such as printers, scanners and data storage devices, anywhere on the LAN. LANs are characterized by higher communication and data transfer rates and the lack of any need for leased communication lines. A data network is an interconnected system of computers, peripherals and software over which data files and messages are sent and received. LAN is only one type of computer network. LAN define is Datacom system allowing a number of independent devices to communicate directly with each other, within a moderately sized geographic area over a physical communications channel of moderate data rates. Fiber-optic communication is a method of transmitting information from one place to another by sending pulses of infrared light through an optical fiber. The light is a form of carrier wave that is modulated to carry information. Fiber is preferred over electrical cabling when high bandwidth, long distance, or immunity to electromagnetic interference is required. This type of communication can transmit voice, video, and telemetry through local area networks or across long distances. Optical fiber is used by many telecommunications companies to transmit telephone signals, Internet communication, and cable television signals. Researchers at Bell Labs have reached a record bandwidth distance product of over 100 petabit × kilometers per second using fiber optic communication. Communication between remote parties can be achieved through a process called Networking, involving the connection of computers, media and networking devices. When we talk about networks, we need to keep in mind three concepts, distributed processing, network criteria and network structure. The purpose of this Network is to design a Local Area Network (LAN) for a BAEC (Bangladesh Atomic Energy Commission) Head Quarter and implement security measures to protect network resources and system services. To do so, we will deal with the physical and logical design of a LAN. The goal of this Network is to examine of the Local Area Network set up for a BAEC HQ and build a secure LANsystem.

KEYWORDS: *Lan, Secure Lan, Btcl, Utp, Rj-45, Bandwidth, Wavelength, Isp, Firewall, Baec*