AN OVERVIEW ON E-MAIL AND PROTOCOLS INCLUDED WITH THE I P AND SMTP

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ABSTARCT

email is a service which allows us to ship the message in electronic mode over the net. It gives an green, inexpensive and actual time imply of dispensing statistics among people. however, you could also ship non textual content files -- inclusive of graphic pix and sound files -- as attachments despatched in binary streams. electronic mail was one of the first activities carried out over the net and is still the most famous use. A big percent of the whole site visitors over the internet is email. e mail can also be exchanged among online provider provider users and in networks apart from the internet, both public and personal. This paper truely discusses approximately the protocols protected with the internet protocol (IP) and SMTP (simple Mail transfer Protocol).

KEYWORDS: Email, electronic mode, non text files, internet protocol (IP), SMTP (Simple Mail Transfer Protocol).

INTRODUCTION:

Email is a service which allows us to send the message in electronic mode over the internet. It offers an efficient, inexpensive and real time mean of distributing information among people.
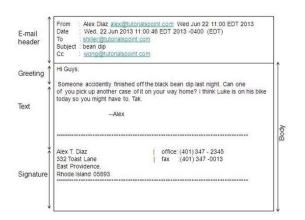
E-Mail Address:

Each user of email is assigned a unique name for his email account. This name is known as E-mail address. Different users can send and receive messages according to the e-mail address.

E-mail is generally of the form username@domainname. For example, webmaster@tutorialspoint.com is an e-mail address where webmaster is username and tutorialspoint.com is domain name.

- The username and the domain name are separated by @ (at) symbol.
- E-mail addresses are not case sensitive.
- Spaces are not allowed in e-mail address.

E-mail Message Components:

E-mail message comprises of different components: E-mail Header, Greeting, Text, and Signature. These components are described in the following diagram:

E-mail Header:

The first five lines of an E-mail message is called E-mail header. The header part comprises of following fields:

- From
- Date
- To
- Subject
- CC
- BCC

From:

The From field indicates the sender's address i.e. who sent the e-mail.

Date:

The Date field indicates the date when the e-mail was sent.

To:

The To field indicates the recipient's address i.e. to whom the e-mail is sent.

Subject:

The Subject field indicates the purpose of e-mail. It should be precise and to the point.

CC:

CC stands for Carbon copy. It includes those recipient addresses whom we want to keep informed but not exactly the intended recipient.

BCC:

BCC stands for Black Carbon Copy. It is used when we do not want one or more of the recipients to know that someone else was copied on the message.

Greeting:

Greeting is the opening of the actual message. Eg. Hi Sir or Hi Guys etc.

Text:

It represents the actual content of the message.

Signature:

This is the final part of an e-mail message. It includes Name of Sender, Address, and Contact Number.

Advantages:

E-mail has proved to be powerful and reliable medium of communication. Here are the benefits of E-mail:

- Reliable
- Convenience
- Speed
- Inexpensive
- Printable
- Global
- Generality

Reliable:

Many of the mail systems notify the sender if e-mail message was undeliverable.

Convenience:

There is no requirement of stationary and stamps. One does not have to go to post

office. But all these things are not required for sending or receiving an mail.

Speed:

E-mail is very fast. However, the speed also depends upon the underlying network.

Inexpensive:

The cost of sending e-mail is very low.

Printable:

It is easy to obtain a hardcopy of an e-mail. Also an electronic copy of an e-mail can also be saved for records.

Global:

E-mail can be sent and received by a person sitting across the globe.

Generality:

It is also possible to send graphics, programs and sounds with an e-mail.

Disadvantages:

Apart from several benefits of E-mail, there also exists some disadvantages as discussed below:

- Forgery
- Overload
- Misdirection
- Junk
- No response

Forgery:

E-mail doesn't prevent from forgery, that is, someone impersonating the sender, since sender is usually not authenticated in any way.

Overload:

Convenience of E-mail may result in a flood of mail.

Misdirection:

It is possible that you may send e-mail to an unintended recipient.

Junk:

Junk emails are undesirable and inappropriate emails. Junk emails are sometimes referred to as spam.

No Response:

It may be frustrating when the recipient does not read the e-mail and respond on a regular basis.

LITERATURE REVIEW:

Klensin, J., (2001), This report is a self-contained specification of the primary protocol for the net e mail transport. It consolidates, updates and clarifies, however does not add new or trade current capability of the subsequent- the authentic SMTP (easy Mail transfer Protocol),domain name gadget necessities and implications for mail delivery, the clarifications and applicability statements and material drawn from the SMTP Extension mechanisms.

M. R. Crispin. ,(2003), about fifteen years ago, I wrote a paper on protection problems inside the TCP/IP protocol

suite, specially, I targeted on protocol-stage troubles, in preference to implementation flaws. it's miles instructive to appearance returned at that paper, to see in which my consciousness and my predictions have been accurate, in which i used to be incorrect, and wherein risks haven't begun to take place. that is a reprint of the unique paper, with added remark.

Tzerefos, et.al.., (1997), We gift the main functions and functionality of the 3 most widely used message transfer protocols. We look at actual implementations and base our analysis on benchmarking. The performance of the protocols is in comparison in phrases of stop to cease postpone, quantity of traffic and quantity of frames generated on the physical layer and body period distribution. An analytical model is proposed for the approximation of the upper and decrease bounds of quantity generated by SMTP that could without difficulty be extended for POP3. The model considers each specific and piggyback acknowledgements at the TCP layer.
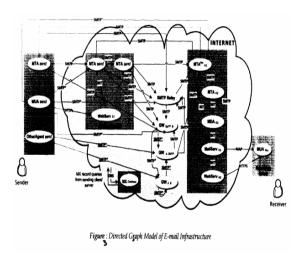
Robin Williams, et.al.., (1996), The preliminary concept of this system is advanced right into a more sensible version, in large part primarily based on remarks made by means of committee participants within the survey. person participation in this manner is another recognition; the associated pros and cons, as perceived via one of a kind stakeholders, are provided and mentioned. ultimately, I attempt to shape a coherent picture out of the numerous subjects addressed so far. the present family members among innovation theory, user requirements, creation strategies, and standardisation methods

are pointed out, and a few conclusions that may be drawn from those members of the family are offered.

METHODOLGY:

Infrastructure and Protocols infrastructure incorporates of numerous hardware and software program components. It includes sender's consumer and server computer systems and receiver's consumer and server computer systems with required software program and offerings set up on every. except those, it uses diverse structures and offerings of net. The sending and receiving servers are continually related to the internet but the sender's and receiver's clients connect with the net as and when required. At each element numerous speaking entities called nodes are involved inside the technique of transport. The directed graph version of net infrastructure proven in determine 1 may be used to study infrastructure and protocols concerned in advent, transmission and transport method. The vertices in this version represent infrastructural factors and every aspect corresponds to the viable path and protocol. each vertex corresponds to an nod£ which is essentially a software unit worried in electronic mail communication procedure and works on software layer of TCP/IP version. Nodes running on lower layers consisting of routers and bridges represent options to send with out the use of SMTP are not considered in this model as nearly all verbal exchange makes use of SMTP without delay or indirectly. further, proprietary nodes used for internal deliveries at sending and receiving servers are also no longer taken into consideration in this version. All Mail person Agent (MUA) nodes are software packages that run on consumer

computers and permit stop users to compose, create or examine. some MlIAs can be used to ship to the receiving MTAs immediately or circuitously. 'Microsoft Outlook', 'Microsoft Outlook express', 'Lotus Notes', 'Netscape communicator', 'Qualcomm Eudora', 'KDE KMail', 'Apple Mail', and 'Mozilla Thunderbird' are examples of MUAs. two or extra MTAs can be used at the sending servers to make transport. numerous internet-based totally programs and offerings (called Web the email) together with 'goal Mail', 'Yahoo Mail', Gmail, and 'Hote mail' which integrate clients and servers behind a web server are also used as MUAs. Mail switch Agent (MTA) nodes are in effect postal sorting retailers that have the responsibility of retrieving the applicable Mail alternate (MX) report from the area name Servers (DNS) for each to be send and accordingly map the wonderful addressee's area call with the relevant IP cope with records.

Figure : Directed Graph Model of E-mail Infrastructure

DNS is a distributed listing database that correlated domain names to IP addresses. MTAs can also be used to compose and create messages. 'Sende-mail', 'Postfix', 'Exim', and 'trade Server', are examples of MTAs. A receiving MTA can also perform the operation of delivering message to the respective e mailbox of the receiver on the e mail server and hence is likewise referred to as Mail transport Agent (MDA). Node named other sellers are software program packages that ship message through gateways. web Serv nodes are internet servers that provide the net surroundings to compose, send and study an message. SMTP-Relays are the nodes that carry out relaying. Relaying is the system of receiving message from one SMTP node and ahead it to every other one. Gateway nodes are used to transform messages from one software layer protocol to different. Gateway nodes named G W sm tp, b receive SMTP protocol primarily based e-e-mails and switch them with protocols apart from SMTP and G W a , sm tp performs the inverse method at incoming and outgoing interfaces. Gateway nodes GWa,b do no longer use SMTP both for incoming or outgoing interfaces. A method known as Proxy can be completed at these nodes while incoming and outgoing interfaces use same protocols. Mail Serv node represent server supplying users electronic mailemail get admission to provider the use of IMAP or POP3 protocols. It also presents an internal interface to a web server for HTTP primarily based get admission to. nodes establish connections with one or greater nodes. each fringe of the graph connecting nodes represents feasible flow among them using a particular set of protocols. table 1, lists fundamental protocols used in drift

between   possible   nodes.

Table : E-mail Communication Protocols

Protocol Group	Basic Protocols
SMTP	SMTP protocol (RFC 821), SMTP service extension protocols ESMTP including Service Extension for Authentication (RFC 2554), Delivery by SMTP Service Extension (RFC 2852), SMTP Service Extension for Routing Enhanced error (RFC 2034), and SMTP Service Extension for Secure SMTP over Transport Layer Security (RFC 3207).
SMTP'	All protocols in SMTP group and all SMTP extensions for e-mail submission from MUA to e-mail node with SMTP incoming interface. E-mail node can be MTA defined in RFC 2821, MSA defined in RFC 2476. Using MSA various methods can be applied for ensuring authenticating user that include IP address restrictions, secure IP and POP authentication.
SMTP*	All Internet application protocols except those specified in SMTP' group, all propraitory application protocols used on the Internet (also used for tunneling), all Internet protocols on the transport and network layers such as TCP/IP as it is possible to send e-mail without the use of application layer protocols.
HTTP(S)	HTTP (RFC 2616), HTTP over SSL and HTTP over TLS (RFC 2818).
INT	ESP specific protocols and procedures for internal e-mail delivery between e-mail nodes.
MAP	All e-mail access protocols used to transfer e-mails from the recipient e-mail server to MUA that include IMAP version 4 (RFC 1730), MAPI and POP version 3 (RFC 1939).

RESULTS:

simple Mail transfer Protocol, a protocol for sending messages among servers. most structures that send e-mail over the internet use SMTP to send messages from one server to another; the messages can then be retrieved with an client using both POP or IMAP. in addition, SMTP is normally used to ship messages from a electronic mail client to a e-mail server. this is why you need to specify both the POP or IMAP server and the SMTP server when you configure your utility. some recent general or experimental extensions to SMTP pertain to: guide for numerous carrier environments, global delivery repute and deposition notifications, internationalized cope with, submission carrier extension for destiny message release, content material conversion and message monitoring.

CONCLUSION:

e eemail is designed to be an open and on hand platform that enables users to talk with every different and with humans or organizations within an agency. e mail can be distributed to lists of people, in addition to to people. A shared distribution listing can be controlled through using an e mail reflector. some e-mailing lists allow you to subscribe by

means of sending a request to the e mailing list administrator. A emailing listing that is administered robotically is referred to as a listing server. SMTP, a protocol for sending messages between servers. maximum structures that send electronic mail over the net use SMTP to send messages from one server to every other; the messages can then be retrieved with an purchaser the use of both POP or IMAP. Many extensions to the primary operation of SMTP have been described. those are enabled whilst SMTP servers assisting the extension set up a session the use of the EHLO command and appropriate extension reaction codes.

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