1. Explain Mail servers and what are its uses and advantages?
Ans: A mail server (also known as a mail transfer agent or MTA, a mail transport agent, a mail router or an Internet mailer) is an application that receives incoming e-mail from local users (people within the same domain) and remote senders and forwards outgoing e-mail for delivery. A computer dedicated to running such applications is also called a mail server. Microsoft Exchange, qmail, Exim and sendmail are among the more common mail server programs.
The mail server works in conjunction with other programs to make up what is sometimes referred to as a messaging system. A messaging system includes all the applications necessary to keep e-mail moving as it should. When you send an e-mail message, your e-mail program, such as Outlook or Eudora, forwards the message to your mail server, which in turn forwards it either to another mail server or to a holding area on the same server called a message store to be forwarded later. As a rule, the system uses SMTP (Simple Mail Transfer Protocol) or ESMTP (extended SMTP) for sending e-mail, and either POP3 (Post Office Protocol 3) or IMAP (Internet Message Access Protocol) for receiving e-mail.
Advantages
- Emails are delivered extremely fast when compared to traditional post.
- Emails can be sent 24 hours a day, 365 days a year.
- Webmail means emails can be sent and received from any computer, anywhere in the world, that has an Internet connection.
- Cheap - when using broadband, each email sent is effectively free. Dial-up users are charged at local call rates but it only takes a few seconds (for conventional email, eg text only) to send an email.
- Emails can be sent to one person or several people.

2. Write full form of the following-
a) MIME
b) SPF
c) SMTP
d) BHO
e) VFS
Ans: a) MIME - Multipurpose Internet Mail Extensions
b) SPF - Sender Policy Framework
c) SMTP - Simple Mail Transfer Protocol
d) BHO - Browser Helper Object
e) VFS - Virtual file system

3. How the communication between a web server and a database takes place?
Ans: The performance of the Web Server/applications access will be improved by configuring iRules on F5 load balancer to bypass the Proxy servers and can directly access to the destination server. In the database server aspects, reliable performance will be enhanced by separating OLAP, Reports workloads into standby server and OLTP workloads on primary database server not to impede each other. The web application performance with ensured network reliability and security has been improved through the entire proposed methodologies. Web application users are accessing primary database server through requesting web server. Any Online Transactional Processing (OLTP), Online Analytical Processing (OLAP) and Reports related transactions are processing at primary database server. Ultimately, primary database server resources (Memory, IO and Processor) are utilized heavily. All the SQL procedures which related to the OLTP, OLAP and reports execution happens on the primary database server. Due to this, database and tables of primary server were heavily accessed. Standby server resources are not efficiently utilized apart from the operation of database synchronization.
Primary database server contains mixing of OLTP, OLAP, and reporting workloads. OLTP workloads are characterized by many small transactions, with an expectation of quick response time from the user. OLAP and reporting workloads are characterized by a few long-running operations that might consume more resources and cause more contention. The long-running operations are caused by locking and by the underlying physical sub-system. Hence, the long running operations cause the performance hindrances on web application. Due to this response from database server to web server takes plenty amount of time.