Q. Certain web pages are loading slow in user’s browser for our live web application. What steps will you take to resolve the issue?

Answer: Due to below reasons user's can find some web pages are loading slow...

1. Lots of HTTP request.

2. Not using caching techniques

3. unoptimized files & uncompressed images.

4. Not using CDN

5. Lots of ads.

I will take below steps to resolve this issue...

1. As we know having loads of javascript , css, image file can create too many http requests. When any user visits any website the browser performs several requests to load each of these files and as a result this can reduce the page load speed.

So i can reduce the number of files on my web pages if possible including css, images & js. Need to use CSS sprites to reduce http request.

2. Browser caching allows any websites to store frequently used data points in cached memory. Any request for the same content gets served from the cached memory. Static assets have a cached lifetime for at least one week.

3. Need to optimize files & compress images for fast loading speed of a website.By enabling gZIP compression we can wrap all the web objects(images, css, javascript files)

in a single container before they are sent over to the requesting browser.

4. Content Delivery Network (CDN) is a collection of web servers distributed across mutiple locations so that content can be more efficiently delivered to users. Servers are selected based upon the user's measure of network proximity. For example, the server with the quickest response time and/or fewest network hops is chosen.

5. As we know displating advertisements are great for monetizing high traffic websites. limiting the number of display advertisements will ensure better performance for any website.

Q. Write a bash function that will find all occurrences of an IPv4 from a given file.

Answer: We can use egrep or grep with -E parameter to find all occurrences of an IPv4 from a given file.

like ...

egrep -o '^([0-9]{1,3}\.){3}[0-9]{1,3}' iplist.text

Q. Explain how you can ssh into a private server from the internet.

Answer: To access a private server from the internet we do need a VPN connectivity with this described private network. By using VPN connectivity we will get an ip address of same ip bloack of that network. Then we do ssh into this private server.

Q. Currently there’s no monitoring in place for the above single web server. How and what application will you use to monitor the resources/process in your new design?

Answer: To monitor the resources/process we can install a monitoring tool like zabbix, icinga. These are open source gui based monitoring tool. Using these tool we can monitor process/resources of a single web server.

Q. In our server we want to create a user who can only view logs using `less` from this path /var/log. Please explain how to achieve this.

Answer: To do this we can create a user under restricted bash. Then we can create directory named by bin like /home/test/bin. We can link the command 'less' with this path /home/test/bin/less

using below command

ln -s /bin/less /home/test/bin/less

Then we need to change the PATH localtion of the user's bash profile like PATH=$HOME/bin

Then we do need to change the file ownership & file mode of bash profile so that test user can't do any changes of its bash profile.

Then we can use acl to provide read access the specific directory like /var/log/. To do this we can use setfacl command.

Q. Imagine a scenario where a web application is serving from a single web server to the internet. What are the problems in this scenario? Design and architect a solution that will mitigate these problems? Or How would you design a scalable architecture with resiliency in mind for the following situations:

a. if a service is resource intensive

b. a service needs to be low latency

c. if parts of a service need to be restricted to certain geographical boundaries

Answer:

Using a single web server to provide web services through internet may happen some problems like if the server is down due to any reason website will be unavailable, so high availability functions is not available in here. We can mitigate this problem using clustering concept. We can use veritas cluster to do this. We can use HAProxy for load balance. To ensure high availability & scalability both we can host web server in cloud infrastructure like AWS. We can restrict some parts of a service to certain geographical boundaries using AWS CloudFront Geo Restriction.