Tony’s Chips Online Shopping Website

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Introduction:

The new independent organization has purchased Tony’s Chips. The new management of the company has decided to transfer the existing externally hosted site to an internally hosted site. The new management needs a backup of the website, and they also require redundancy of the site. Other than website migration, the new management also wants to redesign the website with the functionality of buying things online. The migration of the new site, the addition of online shopping functionality, and the implementation of a redundant website are all accomplished by following the software development lifecycle (SDLC). The software development life cycle includes phases; each phase has different tasks to develop software. The phases of SDLC include planning, analysis, design, implementation, testing and deployment (“What Is the Software Development Life Cycle (SDLC)?,” 2013).

To develop the web architecture, the most critical step in the software development process is the planning phase. The reason behind naming the planning phase as a critical one is that all the information required to build software is attained in this phase. The success of the end product largely depends on the planning phase. The end product should meet the requirements of the management. This is the phase in which the base of the project has been laid down, and this affects the entire steps to build and implement a new website for Tony’s Chips. There will be proper implementation of business practices on the new website, having a redundant version embedded with an online shopping module for customers. A feasibility study is carried out during this phase in which cost-benefit analysis is done. This study enables us to make decisions and suggestions on particular steps or phases of SDLC. The decisions will be made by keeping in view the operational, economic, time and technical factors (Lim, 2017).

The phase following the planning phase of web architecture building is the analysis phase. In this phase, the logical model of the project is created. In this phase, the IT professional proceeds with the investigation initiated in the planning phase. Interviews and surveys are conducted, observations are made, and document reviews are done to collect every minor detail of requirements and acquire the actual understanding of the system or project. In this phase, the cost and benefit analysis of the system is performed and recorded in requirements documents created by IT professionals. The management and user claims are also documented in the requirement document. Alternate development strategies will be suggested in this document. In this phase, the system software and hardware are decided and finalized. System Design Specifications are formulated during this phase

and are disclosed to the higher management and to the users for review and approval.

Tony's Chips website architecture must not be huge. It will have a simple architecture, as it is a small company, and the existing website's architecture is also simple. The new management has demanded the redundancy of the new website, which needs to be focused on and planned, as it requires extra equipment and infrastructure to be installed in place. According to this redundancy requirement, the web architecture will include multiple web servers, database servers and replica servers to store the backup of the website and redundant website in case of server downtime. It is an online project, so connectivity to the internet must be there to guide customers to use this site from anywhere in the world. To secure the network, the security-enabling network devices are to be purchased. In this case, firewalls, both software and hardware, will be purchased. A DMZ network will be maintained to allow customers to view the information on the webserver as they shop online. The database and redundant servers are secured by the firewall, which is placed in front of them, thus preventing unauthorized access to the server ("UML – Architecture," 2017; "What Is Redundancy and Why Is It Important?," 2017).

The site will be secured to restrict intruders from gaining unauthorized access to database servers. To build a web application for Tony's Chips, the system software will be LAMP. It is an open-source web development platform. This software has many components essential for web application development. The components are Linux, Apache server, MySQL, and PHP. Linux is the operating system, Apache is the web server, MySQL will be the database, and PHP will be used for dynamic scripting. The components of LAMP are open source and are freely available, thus minimizing the cost of the overall system. The advantage of using the Linux operating system is that it provides more security features as compared to the Windows platform.

The new servers must be ready and running with the site prepared to be accessed before starting the migration. To guarantee that there is a smooth change with insignificant downtime, the pilot operation will be utilized as a part of the migration of the site. Before beginning the migration, you should first guarantee the greater part of the information has been stacked onto the new servers and that the replication server is working legitimately to guarantee all exchanges will be reproduced from the remotely facilitated site to the new inside facilitated site. The redundant architecture of the website is the only solution to disaster recovery.

Essential hardware that must have a backup to guarantee accessibility is the web server and the database server. Notwithstanding having an essential and a backup of each of these two servers, a replication server should likewise be actualized into the architecture in order for the databases on every server to reflect each other. With legitimate arranging and execution of this framework, if the primary servers collapse, there won't be any intrusion of service to the client who is getting to the site. Assess contrasting options to the organization self-facilitating the site.

There are a few options that the company could seek after other than self-hosting the site. One option is to have the site with an outer service that, as of now, has the servers and service set up, yet this

alternative diminishes the measure of control that the company has over the site. A web-hosting company is another contrasting option to self-hosting the website which could be gainful to the company. With these web-hosting organizations, you can lease or rent whole servers that are now on the web and physically put away at the web-hosting company webpage or server rooms as opposed to being situated at your company area. This choice will enable you to have control over the servers without having the necessity to either store the servers or perform routine upkeep on them ("Web Hosting," 2017).

The advantages of this option are that you will have diminished downtime and operation more than 99% of the time, upgraded security as these organizations have top-notch security and security specialists hired at their destinations, and lower costs, as the greater part of the equipment, physical location, and framework is given by the web-hosting company.

The website architecture that has been chosen will provide an essential web server and database server and a substitute web server and database server. Moreover, the architecture with two web servers and two database servers will likewise comprise a replication server. Another segment of the architecture will be the two firewalls that will enable the clients to get to the web servers and will likewise keep them from getting to the database servers or the replication server. With this architecture, the majority of the higher management's claims for inside hosting of the website, substitute ability, and enabling clients to do online shopping will be met, and it will likewise give the organization adequate security on the framework to avoid unapproved access to the database and replication servers. One of the fundamental worries of the authority is a backup site in the event the principal site goes down for any reason.

On account of this, there is a necessity for an alternate system to gain control in case of a collapse, which is the explanation behind the establishment of two web servers and two database servers. The support for the replication server is on account of, as the name implies, the replication server will duplicate the majority of the information between the two databases. This is vital for the system because of the way that with this server set up there isn't a necessity for faculty to exchange or repeat the information from one database to the next once a day. This will keep the databases consistent by reducing human blunders during information input and will likewise guarantee that the two databases have similar information. On the off chance that one of the database servers fails, then the extra server will gain control, and the site will keep on running as composed. Once the failure is resolved, the two database servers should be accommodated or repeated before bringing the main server back on the web.

Amid the breakdown of one of the database servers, the clients of the webpage won't understand that there is downtime, as the backup server has similar information to the main server because of the consistent replication of information between the two database servers. Moreover, for the web, database, and replication servers, another critical bit of the design is configuring the firewalls to counteract unapproved access to the database to avoid information mishandling and, furthermore, to avoid any client's data from being gotten from the database.

The support for utilizing the LAMP stage is that this system software is usually utilized when creating a website and will meet the whole necessity for actualizing and running the site. Another imperative factor is the security features that are accessible in the versions of Linux. Because the greater part of the segments in the LAMP framework is open source and unreservedly accessible, this will diminish the general cost that will be brought about by Tony's Chips during the design, set-up, and usage of the site.

After the planning, analysis, and designing of the system, the inside facilitated site will be executed in the implementation stage. Once the implementation stage is finished, we move to the systems support and security stage. By facilitating the site inside, there are extra support claims that are required by the organization that would not be required if the site was facilitated by an outside organization. The greater part of the normal support that is required on the system equipment and the site maintenance is currently the duty of the organization. Some of these support necessities are maintaining the databases consistently, either every day or week by week, and ideally having these substitutes put away in another area.

Another help requirement is keeping up the greater part of the equipment to incorporate the servers, cabling, firewalls, and, in addition, the room where the servers are put away and kept up. There is additionally the requirement to monitor and keep up the room itself where the servers are found, including guaranteeing that the temperature is at the right setting and is kept up for ideal operation of the servers, guaranteeing the tidiness of the region and the gear. An extra support requirement is the requirement to examine the network for network performance to guarantee that the network is running productively and will give the clients a decent ordeal while visiting the site. Another requirement for examining the network is to distinguish any malicious attack against the network. Including the functionality of online shopping creates another support task after the website has been actualized: customer help.

Support must be accessible to process the requests, react to messages, or answer telephone calls from clients who have gone by the site and need help. This will likewise include a prerequisite for the extra bosses to be accessible, keeping in mind the end goal to talk with any client who has had an issue with a request or has an objection that can't be settled by one of the client benefit/support delegates.

The assessment of the execution of the new site will be a progressing procedure from the minute that the relocation from the remotely facilitated site to the inside facilitated site starts. Amid the assessment of the movement procedure, the assessment will focus on whether there was any downtime and, if so, what the term of each time there was a blackout. Once the website has been relocated and the essential backup web and database servers are online and working, testing is done to guarantee that they are working appropriately in case of a failure of the essential servers.

Amid this assessment, the main server will be brought down to guarantee that the backup servers are assuming control and executing as planned with the goal that the client won't see that there are any

issues in the framework. With the expansion of the purchase framework, giving the clients the capacity to buy items online, the operation of this part of the framework should likewise be assessed. When offering the capacity for clients to buy items online, the client encounter must be assessed to guarantee that the clients are getting the ideal service. A portion of the things that should be assessed are regardless of whether the things can be chosen and put into the “shopping basket” or not.

The quantity of clients who visit the site ought to likewise be contrasted with the quantity of clients who really buy items from the site. In the event that there are numerous clients who visit the site and place things in the “shopping basket” yet don’t really make a buy, this could be a pointer that there is an issue with the capacity of the buy framework. In the event that it is found that there is an issue with the buying framework, remedial moves ought to be made promptly to enhance the client encounter when going by the site, which thus will likewise build income for the organization.

Tony’s Chips Website – Use Case:
Tony’s Chips Website – System Architecture diagram
Tony’s Chips Website – Schedule

References

Lim, H. (2017). *5 Steps to Migrating Website Without (or Minimal) Downtime*. Retrieved from hongkiat website: https://www.hongkiat.com/blog/website-migration-guide/
UML – Architecture. (2017). Retrieved from tutorialspoint website: https://www.tutorialspoint.com/uml/uml_architecture.htm
Web Hosting. (2017). Retrieved from WEBSITE: https://www.website.com/beginnerguide/webhosting/6/2/types-of-web-hosting-services.ws
What is Redundancy and Why is it Important? (2017). Retrieved from host duplex website: https://www.hostduplex.com/2010/04/13/what-is-redundancy-and-why-is-it-important/