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Demo
STUDY GUIDE

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11 case studies are included. They are:

Case Study #1, Northwind Traders

Case Study #2, Coho Vineyard

Case Study #3, Contoso, Ltd

Case Study #4, Trey Research

Case Study #5, Wide World Importers

Case Study #6, A. Datum Corporation

Case Study #7, Tailspin Toys

Case Study #8, Adventure Works

Case Study #9, Graphic Design Institute

Case Study #10, Proseware

Case Study #11, Consolidated Messenger

Case Study 1, Northwind Traders

Background

Northwind Traders has been one of the top three Internet florist Web sites for the past three years. During an average day, the company processes 50,000 orders. However, during the week before Mother's Day (the second Sunday in May), the order volume goes up dramatically. Last year, the company processed 1 million orders during this week. However, the Web site did not perform well. Northwind Traders estimates that it lost as many as 1 million additional orders.

This year, the company expects traffic on the Web site to be double that of last year.

Northwind Traders wants to make sure that the Web site infrastructure is prepared to handle as many as 4 million orders during the week proceeding this year's Mother's Day.

Performance data gathered during the Mother's Day period last year shows that the following areas were significant bottlenecks:

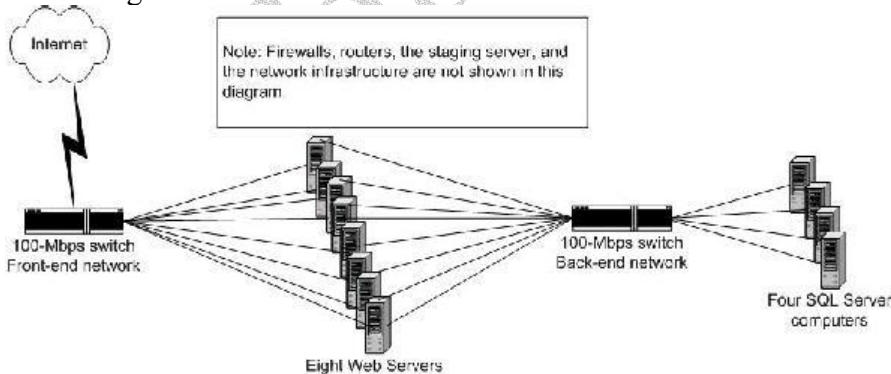
...Access to the product catalog database

...The network connection from the Internet data center to the Internet

...SSL Session initialization

Existing Environment

The company's Web site is currently located in one Internet data center in San Francisco, as shown in the data center diagram.



The Web site has the following characteristics:

Web servers

...Eight Web servers each contain four CPUs and 2 GB of RAM. The Web servers are configured in an NLB cluster that has an affinity setting of None.

...During peak periods on a typical day, the average CPU use for the Web servers is 40 percent.

...During peak periods on a typical day, the average use of the network adapter on the Database servers

...Four Microsoft SQL Server computers each contain eight CPUs and 4GB of RAM.

...During peak periods on a typical day, the average CPU use for the SQL Server computers is 20 percent.

...During peak periods on a typical day, the average of the network adapter on the back-end network for each SQL Server computer is 50 percent.

Databases

...Customer profile and login information is kept in one unpartitioned SQL Server database.

...The product catalog is kept in one unpartitioned SQL Server database and is updated nightly.

...Shopping cart state is managed in a SQL Server database.

General

...All payment-processing traffic is encrypted by using SSL

...There is no routing to the Internet from the back-end network.

Business Requirements

The following business requirements must be met for the Mother's Day traffic:

Temporary Internet data centers for the months of April and May

...The Web site will be replicated to three new temporary Internet data centers.

Customers will be served by servers nearest their home locations.

...The customer base will be divided into four regions of the country: northeast, southeast, Midwest, and west.

One Internet data center will be located in each region.

The existing San Francisco data center will serve the west region.

...In the event of a network outage at one data center, the Web sites will remain available and fully functional at other data center locations for customers in those regions.

Customers in the region experiencing an outage can reconnect to a Web site in another region to place an order.

However, any shopping activity not completed at the of the outage will be lost.

General

...Order response time must be almost the same as on a normal day.

...All services of the Web sites must be highly available in the event of network or server hardware failure.

...The company's server administrators must be able to fully administer all servers from remote locations.

...Security of Web content and user profile information must be maintained at all times.

Technical Requirements

The following technical requirements must be considered

Additional servers

...For the months of April and May, Northwind Traders will lease 24 servers to be used as front-end Web servers. These servers each have two CPUs and 512 MB of RAM.

...For the months of April and May, Northwind Traders will lease 12 servers to be used as back-end SQL Server computers. These servers each have eight CPUs and 4 GB of RAM.

General

...Windows 2000 Advanced Server will be installed on all servers. Microsoft Application Center 2000 will be deployed on all Web Servers.

...Necessary network infrastructure services in the new Internet data centers will be provided by the leases Web or database servers.

...Only HTTP, HTTPS, and VPN traffic will be allowed through the firewall.

...All content staging will occur in the San Francisco data center.

...A common method will be used to replicate Web content from staging server to each regional Web site. The replication method must have restart support in the event of a dropped connection.

QUESTIONS Case Study 1, Northwind traders

QUESTION 1 You need to design a rollback and recovery strategy for content changes to the Web servers. Which element or elements should you include in your design? (Choose all that apply.)

- A. Create an Application Center Web cluster that includes the two staging servers.
- B. Add a second staging server on one of the new internet data centers.
- C. Create an Application Center COM+ cluster that includes the two staging servers.
- D. Take one of the staging servers offline until it is verified that the newly deployed content is error free.
- E. Add a second staging server in the west Internet data center
- F. Remove one of the staging servers from the synchronization loop until it is verified that the newly deployed content is error free.

Answer: A, E, F

QUESTION 2 You want to optimize the SSL initialization for the Web site.

Which two actions should you take? (Each correct answer presents part of the solution. Choose two.)

- A. Design NLB clusters to use the affinity setting of None for the Web servers.
- B. Replace SSL encryption with IPSec.
- C. Use HTTP for all Web site traffic
- D. Add SSL hardware accelerator cards to all the Web servers.
- E. Add SSL hardware accelerator cards to all of SQL Server computers.
- F. Add SSL hardware accelerator cards to two Web servers in each NLB cluster. Filter all SSL traffic to those two servers.
- G. Design NLB clusters to use the affinity setting of Single for the Web servers.

Answer: F, G
