



Exam : 070-443

**Title : PRO: Designing a Database Server
Infrastructure by Using Microsoft
SQL Server 2005**

Ver : 09.24.07

Topic 1, Trey Research, Scenario

BACKGROUND

Company Overview

Trey Research is a nonprofit organization that provides research support to many organizations in the United States.

The company has a single office ,which is located in Chicago.

Planned Changes

The company plans to implement a new SQL Server 2005 failover cluster. This cluster will have one instance for each of three databases that are currently on a mainframe computer. The three databases are named Research., Parts, and Engineering. These databases will hold mission-critical data. The configuration will use a four-node failover cluster to provide an N+1 configuration. This cluster will named SQLCLUST.

When these databases are moved to SQLCLUST, a new identity column will be added to most tables in all of the databases to create a surrogate primary key. When the databases move to production, the seed value should be reset for all identity columns.

New Web services-based applications will be designed to access the Parts, Engineering, Customer, and Bids databases. Users will access these applications by using their Windows credentials.

The company plans to reduce database administration cost by consolidating existing SQL Server computers. The company wants to minimize the number of SQL Server computers and SQL Server instances.

The company plans to create a Bid_Archive database. All rows that contain information on completed bids that do not result in a new extended contract should be moved immediately from the Bids database to Bid_Archive. This information should be available for data retrieval, but changes should not be made to the Bid_Archive database.

EXISTING DATA ENVIRONMENT

Databases

Trey Research currently has eight databases, as shown in the following table.

Database	Data stored
Customer	All Information on customers and current contracts
Contractor	Information on subcontractors and billing
Accounting	Customer billing, accounts payable, and payroll
HR	All current and past employee information including benefits, retirements, and annual reviews
Bids	Future projects and bids
Engineering	Information used for tracking engineering processes
Research	General research and development (R&D) information including schedules and project guidelines
Parts	Information for tracking individual parts and part properties

Data in the Contractor database is read far more frequently than it is modified.

The Bid_Tracking table in the Bids database includes a Completed column that is set to 1 when the bid is no longer active. The table also has a Successful column that is set to 1 when the bid results in a new or extended contract.

Database Servers

The company has three existing SQL Server 2005 computers running with default instances, which contain the databases shown in the following table.

Server name	Databases	Current free server capacity
CertKillerA	Accounting, HR	70 percent
CertKillerB	Customer, Bids	70 percent
CertKillerC	Contractor	80 percent

Database Client Computers

Active Directory Infrastructure

The Trey Research network consists of a single Active Directory domain. All users use Windows user accounts to access SQL Server.

BUSINESS REQUIREMENTS

General Requirements

The company will store completed annual performance review forms in the HR database. Each review form will be larger than 9,000 characters. The column that holds the review form should be able to handle multiple languages and alphabets to support expected international growth in the future. The company wants this data to be accessible in a single column.

The accounting managers must be able to view the current state of the data in the Accounting database at the close of any given day during last seven days. They should be able to undo changes if necessary. Although a single field will not be updated more than once per day, it might be updated on several consecutive days.

Performance

To improve the performance on the Customer database, the company wants to move all

information to a Customer_Archive database that will be available for running long reports that are currently causing contention problems. Management wants to minimize network traffic between the Customer database and the distribution database. In addition, management wants to use the Customer_Archive database as an added layer of fault tolerance. Although additional servers are available, management prefers to use existing servers.

Availability

The Customer database must not fail when a single hard disk on the server fails. The solution must support hot-swappable drives. Additional hardware is available to support this solution.

Recoverability

The Customer database receives numerous changes daily during the business hours of 09:00 to 17:00. The majority of these changes occur the afternoon hours. Very few changes are made outside of business hours. Business requirements allow for up to one hour of data loss. No more than six backups should be required for any recovery. After performance of different backup scenarios was tested, company policy was revised to state that full database backups should not be performed during business hours and differential backups should be performed only once during business hours.

TECHNICAL REQUIREMENTS

Security

The administrators of the Accounting and HR databases are members of a domain global group named Certkiller A_DBA.

These administrators are responsible for managing all databases and SQL Server configurations on Certkiller A.

Users who are members of the DBAdmins global group are responsible for managing the SQL Server instances on Certkiller B and Certkiller C

The central IT department manages the physical computers and the Windows operating systems on which the SQL Server computers reside. Members of the DBAdmins group do not have Windows administrative privileges.

All employee user accounts should be assigned only the minimum permissions that the employees need in order to perform their jobs.

The company's written security policy states that when users of one database need access to another database on a separate SQL Server computer or SQL Server instance, delegation should be used.

Services should not be installed unless absolutely necessary.

Currently, all employees in the human resources (HR) department need read access to every table in the HR database. Hiring managers need to be able to read, add, delete, and modify data in five tables in the HR database. The company plans to add additional tables to which only a few HR employees should have read access. In addition, there will be future employees who will need read access to only one table.

The company is deploying a new custom application to manage the replication for the new Customer_Archive database. The company plans to use common language runtime (CLR) in integration and CLR stored procedures in the Customer database to provide limited and controlled access to the shares and files on Certkiller B.

All assemblies should be created with dbo as the owner.

Maintainability

SQL Server Agent jobs will be scheduled on all servers for maintenance. Alerts will be sent by using Database Mail. No messages will be sent by using Net send. SQL Server computers will have a limited number of Windows shares available for replication and management

Interoperability

All namespaces that are used for Web services applications must be reserved so that another program on the computer cannot reserve the same, even if the SQL Server service is not running.

Topic 1, Trey Research (11 Questions)

QUESTION 1

You need to set up the Bid_Archive database. What should you do?

- A. Configure merge replication to move the data between the Bids and Bid_Archive databases.
- B. Set up DML triggers to move rows from the Bids database to the Bid_Archive database when the Completed column in the Bid_Tracking table is set to 1 and the Successful column is set to 0.
- C. Configure snapshot replication to move all data from the Bids to the Bid_Archive database.
- D. Create a job that is scheduled to run every hour to check for rows in the Bid_Tracking table where the Completed column is set to 1 and the Successful column is set to 0.

Answer: B

QUESTION 2

You need to identify the combinations of the Windows operating system and SQL Server 2005 version that will be the most appropriate for the new R&D configuration, which will include the Research, Parts, and Engineering databases. Which two combinations will be the most appropriate? (Each correct answer presents a complete solution. Choose two.)

- A. Windows Server 2003 Enterprise Edition with SQL Server 2005 Enterprise Edition
- B. Windows Server 2003 Datacenter Edition with SQL Server 2005 Enterprise Edition
- C. Windows Server 2003 Standard Edition with SQL Server 2005 Enterprise Edition
- D. Windows Server 2003 Enterprise Edition with SQL Server 2005 Standard Edition

Answer: A,D

QUESTION 3

Your account name is Pat and you are a member of the db_owner database role. You have the permissions that are required to create the assembly for the new custom application that manages the replication for the Customer database. You need to minimize the attack surface on the server, while creating the assembly for the CLR to use. You need to ensure that your solution fulfills the company's security requirements.

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

- A. WITH PERMISSION_SET = External_Access
- B. WITH PERMISSION_SET = Unsafe
- C. WITH PERMISSION_SET = Safe
- D. AUTHORIZATION dbo
- E. AUTHORIZATION Pat

Answer: A,D

Explanation:

D: Case study text: All assemblies should be created with dbo as the owner.

QUESTION 4

You are a member of the DBAdmins group. You need to configure the HTTP endpoints for the new Web services application that will access the Customer database. You want to accomplish this goal by using the minimum amount of administrative effort, while fulfilling the companys technical requirements. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Install Internet Information Services (IIS) 6.0 on Certkiller B.
- B. Create an implicit namespace reservation while executing the CREATE ENDPOINT command.
- C. Ask the Windows administrator to create an explicit namespace reservation for the HTTP endpoint.
- D. Assign the Control permission on the endpoint to all users that will use the Web services application.
- E. Assign the Connect permission on the endpoint to all users that will use the Web services application.

Answer: C,E

QUESTION 5

You need to define the data type and the table options for a new column named AnnualReview in the HR database. Which two options should you select? (Each correct answer presents part of the solution. Choose two.)

- A. Use the text data type.
- B. Use the nvarchar(max) data type.
- C. Use the varchar(max) data type.
- D. Set the large value types out of row option to Off.
- E. Set the large value types out of row option to On.
- F. Set the text in row option to Off.
- G. Set the text in row option to 7000.

Answer: B,E

QUESTION 6

DRAG DROP

Your boss, Mrs. Certkiller, wants you to design the backup schedule for the Customer database.

Not all locations have to be filled.

Backup types, select from these

Full database backup

Differential backup

Copy backup

Transaction log backup

Incremental backup

Schedules

Twice per day, at 12:00 (noon) and 22:00

Four times per day, at 08:00, 12:00 (noon), 18:00, and 21:00

Daily, at 12:00 (noon)

Daily, at 23:00

Hourly, during business hours

Backup types, place here

Place here

Place here

Place here

Place here

Place here

Answer:

Backup types, select from these

Copy backup
Incremental backup

Transaction log backup

Schedules

Twice per day, at 12:00 (noon) and 22:00
Four times per day, at 08:00, 12:00 (noon), 18:00, and 21:00
Daily, at 12:00 (noon)
Daily, at 23:00
Hourly, during business hours

Backup types, place here

Place here
Full database backup
Differential backup
Place here
Transaction log backup

QUESTION 7

You need to design the consolidation plan for Certkiller A, Certkiller B, and Certkiller C. You need to identify the appropriate combination of SQL Server instances and SQL Server 2005 computers that are needed to fulfill the companys consolidation plans and security requirements. Which combination should you use?

- A. one SQL Server 2005 computer with one instance
- B. two SQL Server 2005 computers, each with two instances
- C. two SQL Server computers, one with one instance and one with three instances
- D. one SQL Server 2005 computer with two instances

Answer: D

QUESTION 8

You need to review the list of expected services for SQLCLUST and disable any nonessential services. Which two services should be disabled? (Each correct answer presents part of the solution. Choose two.)

- A. Cluster service
- B. World Wide Web Publishing service
- C. SQL Server Agent service
- D. Messenger service

E. Server service

Answer: B,D

QUESTION 9

You configure the new server named SQLCLUST with test versions of the Research, Engineering, and Parts databases. The data in these databases is for test purposes only and is not current. You need to move the new Research, Engineering, and Parts databases from the test stage to the production stage as efficiently as possible. Prior to making the databases available to users, which three actions should you perform? (Each correct answer presents part of the solution. Choose three.)

- A. Use the DELETE statement to remove all test data from the three databases.
- B. Run scripts on the production server to build all tables, views, and stored procedures.
- C. Schedule one or more jobs to move all data from the mainframe computer databases to the new databases.
- D. Build all indexes, and update the statistics on all tables.
- E. Manually move all data from the mainframe computer to the new databases by using the SELECT INTO command.

Answer: B,C,D

QUESTION 10

You need to configure the security for the HR database to support current security needs, while minimizing the impact of future security changes that might be caused by user and table additions. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Grant the SELECT permission on all current tables to the public database role.
- B. Create an HR_Readers role, add all employees in the HR department to this role, and grant the SELECT permission on all current tables to this role.
- C. Add all employees to the db_datareader database role.
- D. Add all hiring managers to the db_datawriter database role.
- E. Create a Hiring_Managers role, add all hiring managers to this role, and grant the role the SELECT, INSERT, UPDATE, and DELETE permissions on the five tables the hiring managers need to manage.

Answer: B,E

QUESTION 11

You need to design a solution to allow the accounting managers to review accounting changes in compliance with the companys business requirements. What should you do?

- A. Set up snapshot replication to a new database named Accounting_Changes. Schedule the snapshot to be sent at close of business every Friday.
- B. Set up transactional replication to a new database named Accounting_Changes. Create

a job to remove all rows that have an inserted date that is more than eight days old.
C. Create a job to create a database snapshot at close of business every Friday. Create another job to remove snapshots that are more than two weeks old.
D. Create a job to create a database snapshot at close of business daily. Create another job to remove snapshots that are more than eight days old.

Answer: D

Topic 2, A. Datum Corporation, Scenario

Company Overview

A.Datum Corporation is an independent software vendor that has a worldwide customer base. The company sells its software through a combination of an e-commerce Web site and a telephone-based ordering system.

Planned Changes.

The company plans to upgrade all of its database servers to SQL Server 2005. The BusinessData database will be redesigned to improve manageability, and a new database named MarketAnalysis will be created to allow marketing analysts to generate reports from sales data. The most common report that will be generated will retrieve the names of products that are sold and the cities where the customers live.

Problem Statements

The company wants to improve the security of its data and wants to minimize the risk of unauthorized data access or malicious attack.

On several occasions, customers were unable to place an order because the database server was unavailable for an extended period of time.

EXISTING DATA ENVIRONMENT

Databases

The HRData database contains employee data, including sensitive information such as salary and employee reviews.

The BusinessData database contains product and data. Analysis indicates that each user typically accesses only a subset of the tables in the database. This subset is related to the department in which the works.

Business analysis indicates that approximately 4,000 new records are added to the BusinessData database each day, and that 90 percent of records are not modified after they are entered.

No managed objects currently exist in any database.

Database Servers

The company currently has a single default instance of SQL Server 2000 in which the HRData database and the BusinessData database are stored. The SQL Server instance is installed on a server named Certkiller 1.

Written company policy to deploy a hardware RAID solution in the next six months. However, no disk redundancy solution is currently implemented.

Database Client Computers

Data in the HRData database is accessed through an ASP.NET application. The application runs in the security context of a Windows user named HRApp and uses Windows Authentication to connect to SQL Server.

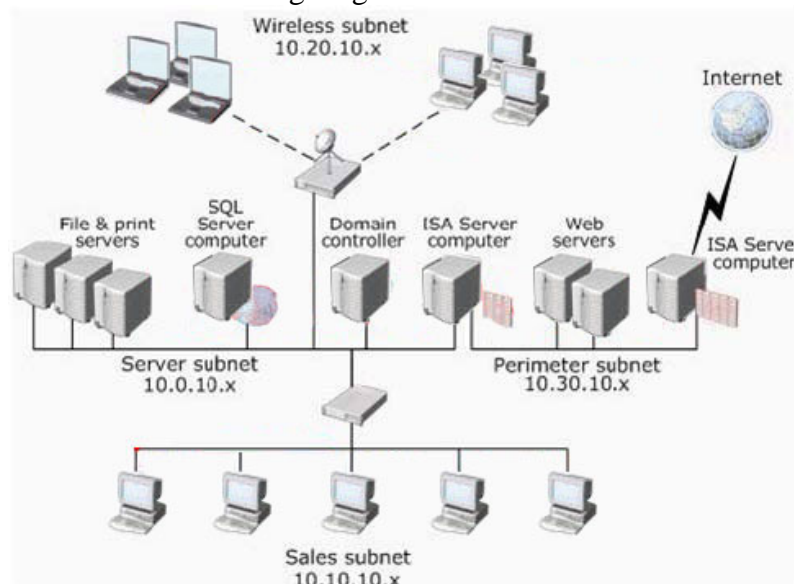
The BusinessData database is accessed by users in the sales department, who use Windows Authentication to connect to SQL Server. In addition, users in the software development team need to access the BusinessData database from client computers that run either a Microsoft Windows operating system or another operating system. Users on client computers that do not run Windows use SQL Server Authentication to connect to SQL Server.

All client applications are configured to connect to the SQL Server instance. Therefore, users do not need to browse for a server.

EXISTING INFRASTRUCTURE

Network Infrastructure

All computers are connected to a TCP/IP-based network. The network is configured as shown in the following diagram.



Computers in the sales call center are connected to the network by network cables. All other computers use 802.11 wireless networking with encryption.

Directory Services Infrastructure

The company's network consists of one Active Directory domain, which contains Windows 2000 Server computers and Windows Server 2003 computers.

Most employees use client computers that run Windows XP Professional. Some developers use client computers that do not run Windows.

A domain-level policy is enabled that enforces password complexity and expiration after 30 days.

Server Infrastructure

In addition to Certkiller 1, there are two unutilized file and print servers that can be used in the proposed upgrade to SQL Server 2005. The specifications for all database servers are shown in the following table.

Server name	Operating system	Processor	Memory	Disks
CertKiller1	Windows Server 2003	Pentium II 300 MHz	1 GB	5 x 100-GB SCSI
CertKiller2	Windows Server 2003	Pentium III 600 MHz	128 MB	3 x 100-GB SCSI
CertKiller3	Windows 2000 Server with Service Pack 3	Pentium III 1 GHz	512 MB	3 x 100-GB SCSI

All Windows Server 2003 computers have the latest service pack applied.

BUSINESS REQUIREMENTS

General Requirements

The upgrade project must not require the acquisition of new hardware or servers. However, the memory, processors, and software in existing servers can be upgraded if necessary.

Performance

The upgraded HRData database and the redesigned BusinessData database must or exceed the performance levels of the current implementations, except in cases where new security-related functionality has a negative impact on performance. In these cases, the performance impact that is caused by security-related enhancements must be minimized. To improve query performance, a partitioned table should be used. The table should be named Sales.Orders and it should have three partitions:

- . one for orders placed in the current month
- . one for orders placed in the previous month
- . one for orders placed in the month prior to the previous month

Order data that is older than the data in the three partitions should be archived in a second partitioned table named Sales.OrderArchive. This table should have two partitions:

- . one for archived order data
- . an empty partition that will be used as a staging area for the archival process

At the end of each month, the following procedure must be used to archive the order data.

1. Use a SWITCH operation to move the data in partition 1 of the Sales.Orders table to the empty partition 2 of the Sales.OrderArchive table.
2. Use MERGE and SPLIT operations to reorganize the data in the Sales.Orders table so that last month's data will be in partition 1, this month's data will be in partition 2, and partition 3 will be empty and ready for next month's data.
3. Use MERGE and SPLIT operations to move all archived data to partition 1 of the Sales.OrderArchive table and to create a new empty partition 2 that will be ready for next month's archival process.

The new MarketingAnalysis database must provide the fastest possible query performance when retrieving data for the most commonly generated reports.

Availability

In the event of server failure, the BusinessData database must be made available as quickly as possible and with a minimum amount of administrative intervention. The company plans to use database mirroring to achieve this goal.

In normal operations, there should be no data loss in the event of a server failure. However, in exceptional circumstances a minimal amount of data loss is acceptable. An interim disk-availability solution must be implemented for Certkiller A until the

hardware RAID solution is implemented. The interim solution must provide fault tolerance in the event that a single disk containing database data fails. The interim solution must minimize the time needed to recover in the event of a system disk failure, and it must provide the highest possible level of read performance while fulfilling the general application solution requirements.

Recoverability

The backup and recovery strategy for the BusinessData database must meet the following requirements.

- . Allow full recovery in the event of total hardware failure.
- . Minimize performance overhead caused by backup and restore operations.
- . Allow the database to be restored with a maximum loss of 30 minutes of database activity.

Include contingency plans to handle database file corruption.

TECHNICAL REQUIREMENTS

Security

All security credentials that are used in all of the company's IT systems must use complex passwords that expire after 30 days.

In the HRData database, sensitive data must be encrypted so that only the login that encrypted the data can decrypt it. The risk of unauthorized access to encryption keys and passwords within the database server must be minimized.

All data that is passed across the network must be encrypted. An HTTP endpoint should be used in the BusinessData database to provide access to two stored procedures named Sales.AddOrder and Sales.GetOrderDetails. The HTTP endpoint must be accessed only by sales employees, who use Windows XP Professional computers in the sales subnet. The risk of security violation must be mitigated by minimizing the attack surface area of the database servers.

Maintainability

The BusinessData database must be implemented so that an object does not need to be renamed or dropped and re-created if the user that created the object is dropped.

The database design should minimize the number of permissions that must be granted on individual database objects.

The database objects must be created by the dbo user.

All backups must be performed using the built-in backup features of SQL Server.

Access to the SQL Server data files will not be required from any third-party applications.

Administrative intervention must be minimized through the use of scheduled tasks that are created by using the Database Maintenance wizard.

The transfer of data from the BusinessData database to the MarketingAnalysis database must be automated through scheduled SQL Server Integration Services(SSIS)tasks.

Topic 2, A. Datum Corporation (10 Questions)

QUESTION 12

You are planning the backup strategy for the BusinessData database. You need to include a strategy for backup redundancy. Which backup redundancy strategy should you include?

- A. Back up the database to a disk backup device, and then back up the database to a tape device.
- B. Use different backup devices for full backups and transaction log backups.
- C. Back up only the filegroups that are not stored in a RAID disk array.
- D. Use a mirrored media set to back up the database to multiple backup devices of the same type.

Answer: D

QUESTION 13

You need to ensure that the companys standard password policy is enforced for all logins that are used to access SQL Server 2005. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Set the appropriate local password policies for all computers on which SQL Server is installed.
- B. Set the server authentication mode of all SQL Server instances to Windows Authentication mode.
- C. Install all instances of SQL Server 2005 on computers that run Windows Server 2003 or later.
- D. Create SQL Server logins that have CHECK_POLICY enabled.

Answer: C,D

QUESTION 14

You want to implement database mirroring to ensure the availability of the BusinessData database. You specify Certkiller 1 as the principal server and Certkiller B as the mirror server. You need to ensure that the database mirroring solution fulfills the business requirements. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Configure Certkiller 3 as a monitor server.
- B. Configure Certkiller 3 as a witness server.
- C. Create a database snapshot of the BusinessData database.
- D. Configure the mirror session to use a synchronous operating mode.

Answer: B,D

QUESTION 15

You are designing a data archival strategy for order data. The placements of data and partitions for the Sales.Orders table at the end of July are shown in the following display. On which filegroup should you locate partition 2 of the Sales.OrderArchive table?



- A. FG1
- B. FG2
- C. FG3
- D. FG4

Answer: B

QUESTION 16

You are designing the interim disk availability solution for Certkiller 1. You plan to use Windows RAID functionality. You need to identify the most appropriate RAID configuration to fulfill the availability requirements. Which RAID configuration should you use?

- A. Create a mirrored volume for the system files and database logs, and a stripe set with parity for the data files.
- B. Create a mirrored volume for the system files and database logs, and a stripe set without parity for the data files.
- C. Create a mirrored volume for the system files, database logs, and data files.
- D. Create a stripe set with parity for the system files, database logs, and data files.

Answer: A

QUESTION 17

You are designing the backup strategy for the BusinessData database. You need to ensure that the backup strategy fulfills the business requirements for minimizing data loss and database downtime. Which three backup methods should your strategy include? (Each correct answer presents part of the solution. Choose three.)

- A. differential backup every three hours
- B. full database backup once per day
- C. transaction log backup every three hours
- D. transaction log backup every 30 minutes
- E. full database backup every 30 minutes
- F. differential backup once per day

Answer: A,B,D

QUESTION 18

You need to implement the HTTP endpoint for the Sales.AddOrder and Sales.GetOrderDetails stored procedures while minimizing the risk of unauthorized access to data and the risk of execution of unauthorized Transact-SQL code. Which action or actions should you perform? (Choose all that apply.)

- A. Specify that the endpoint must support BATCHES.
- B. Specify that the endpoint must use Secure Sockets Layer (SSL) ports.
- C. Grant CONNECT permission on the endpoint to the logins in the sales department.
- D. Grant EXECUTE permission on the Sales.AddOrder and Sales.GetOrderDetails stored procedures to the users in the sales department.
- E. Specify that the endpoint must use clear ports.

Answer: B,C,D

QUESTION 19

You are planning the configuration of the SQL Server 2005 instance where the BusinessData database will be stored. As a security precaution, you need to ensure that Windows services that are not essential are disabled. Which Windows service or services should be disabled? (Choose all that apply.)

- A. SQL Browser
- B. SQL Server
- C. SQL Server Analysis Services
- D. SQL Writer
- E. SQL Server Integration Services
- F. SQL Server Agent

Answer: A,C,D

QUESTION 20

For the MarketingAnalysis database, you are adding functionality that sends the results of a query in an e-mail message to the marketing supervisors when new sales data has been entered. You need to implement a method that fulfills this requirement and minimizes the security risks. Which method should you use?

- A. Database Mail
- B. SQL Mail
- C. a managed stored procedure
- D. a command line program that is called by xp_cmdshell

Answer: A

QUESTION 21

DRAG DROP

Your boss, Mrs. Certkiller, wants you to specify the procedure for implementing

cryptographic functionality in the HRData database.
Select and order the appropriate actions.

Actions, Select from these	Routing terms, place here
Grant the ALTER ANY SYMMETRIC KEY permission to the HRApp user	Place first action here
Create a certificate that is owned by the HRApp user	Place second action, if any, here
Create a master key.	Place third action, if any, here
Create two stored procedures that use the certificate to open the symmetric key. Have one of them encrypt the data with the symmetric key, and have the other decrypt the data with the symmetric key.	Placea fourth ction, if any, here
Create a symmetric key that is owend by the HRApp user and encrypted with the certificate.	Placea 5th ction, if any, here
Create a stored procedure that encrypts the data with the certificate, and create another stored procedure that decrypts the data with the certificate.	Place 6th action if any, here

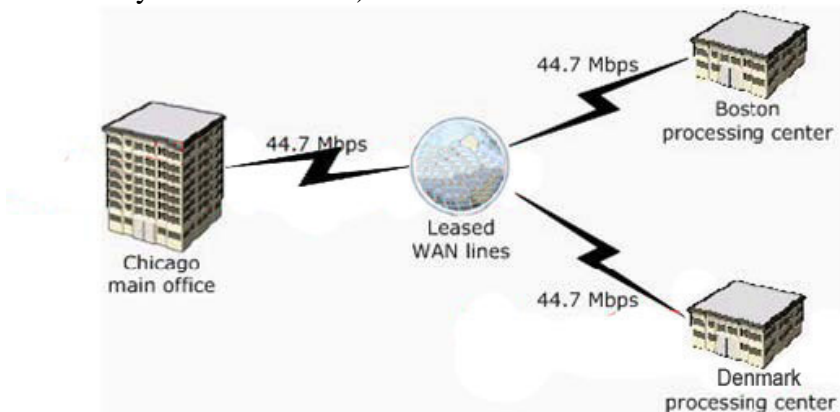
Answer:

Actions, Select from these	Routing terms, place here
Grant the ALTER ANY SYMMETRIC KEY permission to the HRApp user	Create a stored procedure that encrypts the data with the certificate, and create another stored procedure that decrypts the data with the certificate.
	Create two stored procedures that use the certificate to open the symmetric key. Have one of them encrypt the data with the symmetric key, and have the other decrypt the data with the symmetric key.
	Create a certificate that is owned by the HRApp user.
	Create a master key.
Create a symmetric key that is owend by the HRApp user and encrypted with the certificate.	Placea 5th ction, if any, here
	Placea 6th ction, if any, here

Topic 3, World Wide Importers, Scenario

Company Overview

Wide World Importers imports clothing from all over the world. The company sells the clothing to retailers that are located through North America. These retailers place orders based on price lists that are maintained on the Wide World Importers Web Site. The company has 4,500 employees. The company has three offices, which are connected as shown in the following diagram. (The diagram can also be viewed by clicking the Case Study Exhibits button).



Planned Changes

A newly purchased customer relationship management (CRM) application is being installed, and it uses SQL Server 2005 as its data store.

Some database backup jobs on a SQL Server computer named Certkiller A take too long to run. Additional disk drives will be made available to increase the speed of these backups.

The company plans to implement two new SQL Server computers named Certkiller 6 and Certkiller 7.

Problem Statements

Certkiller 7 is currently being tested with the CRM application. A full database backup of the CRM data takes five hours, even though a fast disk volume is being used for the backups.

Database backups on a quality assurance (QA) server named Certkiller 5 are occasionally not usable due to sporadic hardware problems that have not yet been resolved.

EXISTING DATA ENVIRONMENT

Database Servers

The company's central IT department currently supports four production SQL Server computers, one QA server, and one development server, as shown in the following table

Server name	Location	Environment	Databases (sizes)
CertKiller1	Chicago	Production	Marketing (50 GB) HR (35 GB) Orders (500 GB) Accounting (125 GB)
CertKiller2	Denver	Production	D_Inventory (170 GB) D_Shipping (45 GB)
CertKiller3	Boston	Production	B_Inventory (150 GB) B_Shipping (40 GB)
CertKiller4	Chicago	Production	Research (200 GB) Doclib (140 GB)
CertKiller5	Chicago	Quality assurance	Orders (500 GB) HR_qa (20 GB)
CertKiller99	Chicago	Development	(varies with need)

The inventory and shipping databases that are located on Certkiller 2 and Certkiller 3 have identical data base schemas. However, Certkiller 2 contains only information that is related to operations in Denver, and Certkiller 3 contains only information that is related to operations in Boston.

All SQL Server computers were recently upgraded to SQL Server 2005 Enterprise Edition running on Microsoft Windows Server 2003.

Certkiller 1 stores data on a RAID-5 volume and stores log files on a RAID-1 volume.

Database backups from Certkiller 1 are stored on the same drives as the log files.

All drives are located in local hardware-based RAID storage. The company has not invested in storage area network (SAN) or network attached storage (NAS) technology. The orders application is under ongoing development, and new database objects are added on a regular basis.

The marketing database contains a role named marketing-sql-users. Members of this role can access the Marketing application.

Users in the research department frequently perform data analysis by using data that is stored in the Marketing and Accounting databases. In the Accounting database, the users access only a few of the larger tables, working with data from prior months. This data needs to be refreshed only on a monthly basis. In the Marketing database, the users access approximately half of the tables, and they read the most current information that is available. The user in the research department have read-only access to all of the information they access in both database.

Ninety percent of the space in the Doclib database is allocated for storing research documents as binary data and full-text indexes that are used to search those documents. This database is set to use the simple recovery model and has nightly full backups. The documents in this database are relatively volatile, with three percent of them changing each day.

Once per day the company updates the prices that are listed on its Web site by running a stored procedure as a SQL Server Agent job. The stored procedure is owned by a user named Andy, and the stored procedure examines confidential data that is held on Certkiller 4. Andy does not own the tables that contain this data. However, Andy is a member of a group that has been granted permission to read this data.

Overall performance of queries against the two largest tables in the Orders database has been slow. Investigation reveals that only a few types of Transact-SQL batches account

for most of these poorly performing queries. Specifically, the investigation revealed the following results.

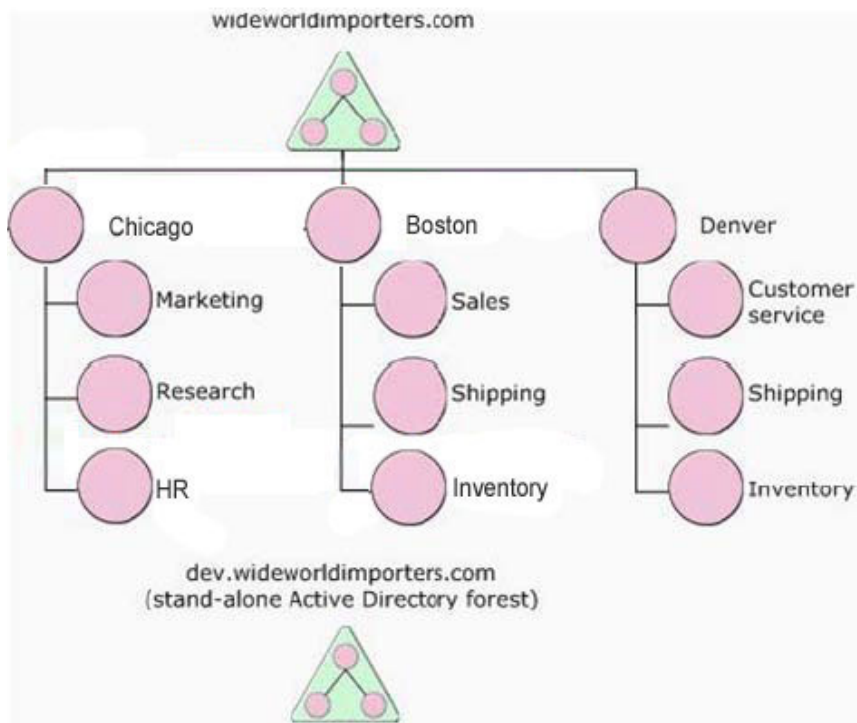
- * Users in the sales department tend to execute a large number of short-running Transact-SQL batches in the Orders database. These batches perform a high proportion of writes, and they use data that is mostly from the current month.

- * By contrast, users in the accounting department execute Transact-SQL batches in the Orders database that are long-running and very read-intensive. These batches use data that is mostly from prior months.

EXISTING INFRASTRUCTURE

Directory Services Infrastructure

The network consists of two Active Directory forests. Each forest contains a single domain. The two domains and the organizational units (OUs) in the wideworldimporters.com domain are shown in the following diagram.



Each department is mapped to an OU, and each departmental OU contains a group that has administrative rights for that OU. For example, there is a Marketing OU for the marketing department, and this OU contains a group named marketing-admin that has administrative rights in that OU.

The Marketing OU in the wideworldimporters.com domain contains a universal group named marketing-sql-access.

The server named SQL99 is in the stand-alone dev.wideworldimporters.com Active Directory forest, which shares no trust relationship with the production wideworldimporters.com forest.

Quality Assurance

The quality assurance (QA) department has a lab with a production-grade server named Certkiller 5 that runs SQL Server. The QA department has given approval for Certkiller 5 to function as a production server if an existing production server

encounters hardware failures. Certkiller 5 uses the same Active Directory domain as the production servers.

To investigate data-related problems, the QA department frequently needs to restore temporary copies of the Orders database onto Certkiller 5. These restores are usually point-in-times that capture the Orders database as it existed at the end of the prior business day.

However, the QA department occasionally needs to investigate problems that involve the current day's activity. On these occasions, the database administrators take an unscheduled backup of the Orders database for the QA department, and this backup is restored onto Certkiller 5.

BUSINESS REQUIREMENTS

Availability

Currently, users in the Denver and Boston processing centers can view inventory data from SQL Server computers at only their respective locations. In the future, all of this data must be made available to users at both locations.

The backups on Certkiller 7 need to take longer than two hours each evening from Monday through Saturday, so that they will not compete for resource with other jobs that run on those evenings. Point-in-time recovery is required for the CRM application. The CRM database contains six different schemas and is currently configured to use the full recovery model.

The orders database on Certkiller A needs to be configured for high availability. The QA department wants to be able to leverage this change so that point-in-time images of the Orders database on Certkiller 5 can be constructed more easily and efficiently.

Recoverability

Recover of the Orders database on Certkiller A should require no more than 10 RESTORE commands in the event of a database failure, and no more than 10 minutes of work should be lost in the event of hardware failure.

The Windows administrators are implementing procedures that will automatically copy backup files to tape after the backups are complete. The disk volumes that store the backups do not need to be fault tolerant.

Data Access

Occasionally, new employees are not able to access the company's database for up to two weeks after their start date. Active Directory administrators in each department have time to set up employee access, but only database administrators have permission to give employees access to the database. The company wants all new employees to be able to use the database no later than two days after their start date.

TECHNICAL REQUIREMENTS

Maintainability

Volatile document data in the Doclib database should be backed up more frequently than the current daily backups, without unnecessarily backing up unchanged data. The full-text indexes that are used to search the documents should also be backed up when they change. Long management should be as simple as possible for the Doclib database.

Data Security

The company's written security policy states that the change history of all data in the HR database must be audited. The auditing should be done in the database so that the auditing cannot be bypassed by employees who use various programs to work with the

data. The audit records must show who performed each change, when the change occurred, and what the actual was prior to and after the change.

Because Certkiller 4 stores confidential research data, the company needs to ensure that the data is passed to and from this SQL Server computer cannot be read by unauthorized users if the data is intercepted on the network.

Secure Communication

To enable users in the Boston and Denver processing centers to view other's inventory data, a secure communication method must be implemented that allows remote stored procedures to be invoked instead of ad hoc SQL being sent across the network.

Portions of the Orders application run on remote client computers that run Linux and that do not support the Microsoft.NET Framework. The communication method that is implemented must also function for those computers.

Application Functionality

Some of the employees in the marketing department must be able to occasionally run unscheduled pricing updates.

The development team wants database snapshots of the HR database to be available on SQL9

Topic 3, World Wide Importers (12 Questions)

QUESTION 22

You need to improve the speed of backups on Certkiller 1. Management has approved the purchase of additional hard disks for this server. What should you do?

- A. Configure the hard disks as a RAID-0 array, and store the backups on this new array.
- B. Configure the hard disks as a RAID-5 array, and store the backups on this new array.
- C. Configure the hard disks as a RAID-10 array, and store the backups on this new array.
- D. Configure the hard disks as a spanned volume, and store the backups on this new volume.
- E. Use the hard disks to extend the volume that currently holds SQL Server backups.

Answer: A

QUESTION 23

You need to implement an auditing strategy that will fulfill the company's business requirements. What should you do?

- A. Use C2 auditing.
- B. Use DML triggers.
- C. Use DDL triggers.
- D. Use event notifications.

Answer: B

QUESTION 24

DRAG DROP

The long-running queries that the employees in the research department run in the Marketing and Accounting database sometimes cause performance problems for other application that use Certkiller 1. A new SQL Server computer named Certkiller 6 has been purchased for the marketing employees to use to run these analytical queries.

You need to select the most efficient method for transferring data from Certkiller 1 to Certkiller 6.

What should you do?

High-Availability Technologies. select from these	
Snapshot replication	Merge replication
Transactional replication	Database mirroring
Databases	High-Availability Technologies, place here
Accounting database	Place here
Marketing database	Place here

Answer:

High-Availability Technologies. select from these	
Snapshot replication	Merge replication
Transactional replication	Database mirroring
Databases	High-Availability Technologies, place here
Accounting database	Snapshot replication
Marketing database	Transactional replication

Explanation:

Given the scenario text.

Users in the research department frequently perform data analysis by using data that is stored in the Marketing and Accounting databases. In the Accounting database, the users access only a few of the larger tables, working with data from prior months. This data needs to be refreshed only on a monthly basis. In the Marketing database, the users access approximately half of the tables, and they read the most current information that is available. The user in the research department have read-only access to all of the

information they access in both database.

Databases	High-availability technology place here	reason
Accounting database	Snapshot replication	Data needs to be refreshed only monthly
Marketing databases	Transactional replication	Data needs to be refreshed near real-time.

QUESTION 25

You are initializing database mirroring between Certkiller A and SQL99. You are attempting to configure mirroring as shown in the following table, but the mirroring sessions do not initialize properly.

Attribute	Value
Primary server name	CertKiller1
Target server name	CertKiller99
Database name	HR
Database recovery mode	Full
Mirroring operating mode	High-performance
Mirroring session authentication	Windows

You need to correct the problem. What should you do?

- A. Change the database mirroring operating mode.
- B. Change the recovery model of the primary database.
- C. Change the authentication method for the mirroring sessions.
- D. Use replication instead of database mirroring between Certkiller A and SQL99.

Answer: C

QUESTION 26

You need to ensure that the WIDEWORLDIMPORTERS\marketing-admin Active Directory group is able to manage authentication for the Marketing application without help from the database administrators. However, you do not want to grant any unnecessary SQL Server privileges to the WIDEWORLDIMPORTERS\marketing-admin group. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a SQL Server login for each user that is authenticated by SQL Server.
- B. Add the WIDEWORLDIMPORTERS\marketing-sql-access Active Directory group as a member of the marketing-sql-users database role.
- C. Add the WIDEWORLDIMPORTERS\marketing-admin Active Directory group to SQL Servers serveradmin fixed server role.
- D. Instruct the members of the WIDEWORLDIMPORTERS\marketing-admin Active Directory group to manage the membership of the WIDEWORLDIMPORTERS\marketing-sql-access Active Directory group.
- E. Add the WIDEWORLDIMPORTERS\marketing-admin Active Directory group to the db_securityadmin fixed database role in each application database.

Answer: B,D

QUESTION 27

You need to enable more frequent backups of only the volatile data that is stored in the Doclib database. What should you do?

- A. Add database log backups of the Doclib database.
- B. Add full database backups of the Doclib database.
- C. Add differential database backups of the Doclib database.
- D. Add differential backups created by the Windows Backup Utility.
- E. Add incremental backups created by the Windows Backup Utility.

Answer: C

QUESTION 28

You need to design an appropriate high-availability configuration for the main Orders database on Certkiller A. Your solution should not require special disk hardware, and it should allow for automatic failover. You need to minimize expenses and administrative effort. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Use database snapshots to provide employees in the QA department with the data access they need.
- B. Use one of the QA departments SQL Server computers in a failover cluster for the Orders database.
- C. Use transactional replication to create a copy of the Orders database in the QA environment.
- D. Use merge replication to create a copy of the Orders database in the QA environment.
- E. Use database mirroring to create a copy of the Orders database in the QA environment.

Answer: A,E

QUESTION 29

You need to design a method for verifying that future backups from Certkiller 5 can be restored and that the databases that are stored in the backups do not contain any allocation, structural, or logical integrity problems. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Restore the backups to another SQL Server computer.
- B. Run Database Console Command (DBCC) statements on the original databases.
- C. Run Database Console Command (DBCC) statements on the restored backups.
- D. Use the RESTORE VERIFYONLY command with the CHECKSUM option.
- E. Use the RESTORE VERIFYONLY command without the CHECKSUM option.

Answer: A,C

QUESTION 30

You must implement the best way to allow the employees in the marketing department to run Andys stored procedure to perform pricing updates. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a database role, and add the marketing employees to this role.
- B. Grant the marketing employees the permission to read the confidential data.
- C. Grant the permission to execute Andys stored procedure to an appropriate role.
- D. Create an application role, and set this role in the Marketing application prior to running the stored procedure.
- E. Modify the stored procedure so that it will always execute with Andys permissions.
- F. Grant the marketing employees the permission to execute Andys stored procedure.

Answer: E,F

QUESTION 31

DRAG DROP

Select the appropriate backup scheduled for World Wide Importers.

Frequencies, Select from these	
Daily	Every six hours
Hourly	Every 30 minutes
Every 15 minutes	Every 10 minutes
Never	All the time

Databases	Frequencies, place here
Backup database --- differential	Place here
Backup log --	Place here
Backup log --- truncate only	Place here

Answer:

Databases	Frequencies, place here
Backup database --- differential	Hourly
Backup log --	Every 10 minutes
Backup log --- truncate only	Never

Explanation:

Give the scenario text:

Recover of the Orders database on Certkiller A should require no more than 10 RESTORE commands in the event of a database failure, and no more than 10 minutes of work should be lost in the event of hardware failure.

Databases	Frequencies	Reason
Backup database - differential	Hourly	Requirement: no more than 10 RESTORE commands.
Backup log --	Every 10 minutes	Requirement: no more than 10 minutes data lost.
Backup log - truncate only	Never	No reason, destroys the backup plan continuity

QUESTION 32

You need to ensure that all communication with Certkiller 4 is as secure as possible.

What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. Set the Windows IP Security Policy on the SQL Server computers to require security.
- B. Use SQL Server Configuration Manager to set the ForceEncryption option.
- C. Use SQL Server Configuration Manager to specify that SQL Server will listen on port 443.
- D. Require client computers to possess X509 certificates from a trusted certificate authority (CA).

Answer: B,C

QUESTION 33

You need to increase the speed of query execution in the Orders database for the sales and accounting departments with no impact on existing application code. What should you do?

- A. Create a database snapshot that can be used to access the older data.
- B. Use replication to move a copy of the older data into a separate database.
- C. Use log shipping to move a copy of the older data into a separate database.

D. Design a partitioning scheme to store the current data and the older data on separate disk volumes.

Answer: D

Topic: Topic 4, Certkiller 's Travel, Scenario

BACKGROUND

Company Overview

Certkiller 's Travel provides a variety of travel services. It has 15 storefront agencies in 10 major North American cities, and a main office in Atlanta. The company also serves worldwide customers through an online travel agency.

Planned Changes

Certkiller 's Travel plans to upgrade all existing SQL Server computers from SQL Server 2000 to SQL Server 2005. The company wants to consolidate servers wherever possible in order to improve manageability and to lower the total cost of ownership.

The company plans to implement database standards and conventions including object naming conventions, coding standards, schema naming conventions, and documentation standards.

Problem Statements

The company needs to define and document its disaster recovery plan, including possible failures, error messages, and recovery steps.

Due to the high volume of reservations in the TravelOnline and Storefront databases, an agent might inadvertently delete existing reservations. Currently, full restores followed by point-in-time transaction log restores can be used to recover lost data. However, administrators might choose not to use a restore to recover the lost data if they decide that too many other changes will be lost.

EXISTING DATA ENVIRONMENT

Database Servers and Databases

All SQL Server computers are located at the main office in Atlanta. Currently all SQL Server computers are installed with a single default instance.

The existing databases are shown in the following table.

Server name	Server configuration	Database name	Database size	Description
CertKiller1	<ul style="list-style-type: none"> 1 GB of RAM 550-MHz processor 650 MB of free hard disk space 	HR	500 MB	Employee information, benefits information, and commission data
CertKiller2	<ul style="list-style-type: none"> 3 GB of RAM 3.8-GHz processor 6 GB of free hard disk space 	Storefront	2 GB	Reservation tracking and completed travel forms for storefront travel agencies
CertKiller3, in the perimeter network	<ul style="list-style-type: none"> 2 GB RAM 2.53-GHz processor 5 GB of free hard disk space 	OnlineReadOnly	3 GB	Read-only subscriber to the TravelOnline database. Provides information on existing reservations to Internet customers through the Web server.
CertKiller4	<ul style="list-style-type: none"> 3 GB of RAM 3.8-GHz processor 3 GB of free hard disk space 	TravelOnline	5 GB	Reservation tracking and completed travel forms for the online travel agency

The Storefront database is accessed through a Microsoft Visual Basic application. The TravelOnline and OnlineReadOnly databases are accessed through a Web services application.

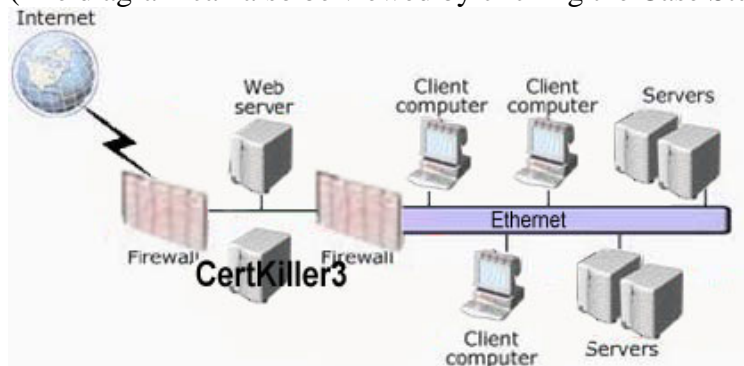
Database Client Computers

Client computers run Microsoft Windows XP Professional, Windows 2000 Professional, or Windows NT Workstation 4.0 with Service Pack 6.

EXISTING INFRASTRUCTURE

Network Infrastructure

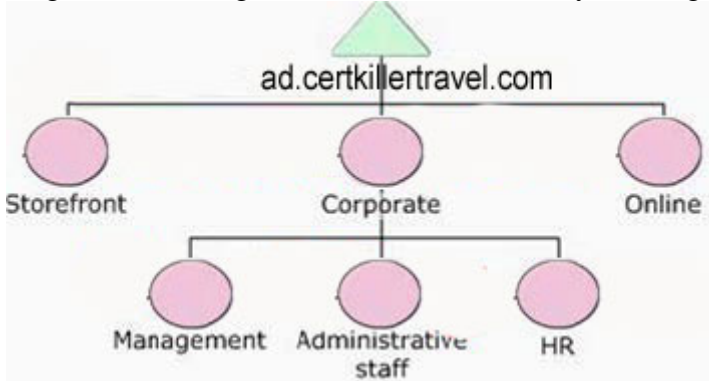
The relevant portion of the network is configured as shown in the following diagram. (The diagram can also be viewed by clicking the Case Study Exhibits button.)



Directory Services Infrastructure

The network consists of a single Active Directory forest with a single domain. All

employees use domain user accounts. Users are organized into organizational units (OUs) by department. The Active Directory domain is configured as shown in the following diagram. (The diagram can also be viewed by clicking the Case Study Exhibits button.)



Recoverability

The TravelOnline and Storefront databases are mission-critical. The current backup strategy includes:

- Nightly full backups

- Hourly transaction log backups

- The bulk-logged recovery model

System databases are maintained on a hard disk set that is separate from the user databases.

BUSINESS REQUIREMENTS

Performance

The TravelOnline database is the busiest database and should be optimized accordingly.

In the Reservation table in the Storefront database, reservations that were made during the last six months should be retrieved the fastest.

Scalability

The TravelOnline, Storefront, and OnlineReadOnly databases are expected to double in size in the next year. The other databases are expected to grow by at least 50 percent. All recommendations should support one year's growth.

The company wants all historical and current data from the online and storefront reservations to be available in a new database. Changes should be replicated as they occur. Some latency is permissible. This database will become very large.

The distribution server has a large amount of free disk space. The distribution database must be able to be restored from the most recent backup and then receive changes from the publication database, allowing replication to continue.

Recoverability

All databases must be on fault-tolerant volumes.

Requirements after upgrading to SQL Server 2005 will include:

- Full protection for data that is held in Large Value data types

- Recovery to a specific point in time

- Ability to recover data in a given field that is updated multiple times each day

- Shortened recovery time

The database administrators have the following three naming requirements:

- All objects must be sorted alphabetically by object name, not object type.

- An object's name should represent the object type (for example: table, view).

All objects must be organized by business functions.

All servers must be able to perform a complete or kernel memory dump if the server stops unexpectedly.

A single drive failure should not cause a server to fail.

TECHNICAL REQUIREMENTS

Security

The written company security policy states that e-mail alerts must be sent as securely as possible to users and database administrators.

All users must change their passwords every 30 days, and they must use a minimum password length of nine characters. The company wants to impose additional, unique password requirements for users in the human resources (HR) department.

Database administrators will need to be able to add, modify, and delete database objects when certain criteria are satisfied. Schema modifications will need to be rolled back when these criteria are not satisfied. The criteria for adding and modifying objects differ from the criteria for dropping objects.

The written company security policy states that any SQL Server computer that communicates with a Web server that is accessible from the Internet must be in the perimeter network. This server should hold only one database, and that database should be logically read-only.

Jobs on the SQL Server computers run as different proxy accounts. The company wants to increase security by redesigning the proxy account usage after upgrading to SQL Server 2005.

Maintainability

The company uses SQL Server Agent jobs to maintain the SQL Server computers. These jobs occasionally run programs that execute cmdExec commands and ActiveX scripts. Certkiller 2 must have the capability to automate SQL Server maintenance and to receive replication updates. This server is managed by using Remote Desktop for Administration. Data Transformation Services (DTS) has been used extensively on Certkiller C. Over time, these packages will be upgraded to the new technology. Windows printers and shares do not exist. No users connect to this server directly.

Current SQL Server 2000 computers use SQL Mail to alert database administrators and users when certain changes or events occur.

Supporting Infrastructure

All servers should fulfill or exceed Microsoft's recommended hardware requirements.

Topic 4, Certkiller 's Travel (10 Questions)

QUESTION 34

You need to implement an authentication method on Certkiller 4. The TravelOnline database will be accessed through a Web services application. You need to make the authentication method as secure as possible. What should you do?

A. Create an HTTP endpoint with NTLM authentication, and create a service principal name (SPN).

B. Create an HTTP endpoint with digest authentication, and create a service principal name (SPN).

- C. Create an HTTP endpoint with integrated authentication, and create a service principal name (SPN).
- D. Create an HTTP endpoint with Kerberos authentication.

Answer: C

QUESTION 35

You need to define the steps that are needed to implement the companys object creation and modification policies on SQL Server 2005. You want to achieve this goal by using the minimum amount of administrative effort. Which three actions should you perform? (Each correct answer presents part of the solution. Choose three.)

- A. For each database, create DDL triggers at the database level for the required events.
- B. Grant the ALTER ANY DATABASE permission at the server level.
- C. Grant the CREATE permission to the appropriate users on the appropriate object types at the database level.
- D. Grant the ALTER SCHEMA permission to the appropriate users on the appropriate schemas.
- E. Set up event notifications for all schema changes.

Answer: A,D,E

QUESTION 36

You want to consolidate some of the databases onto existing SQL Server computers until additional hardware can be purchased. You need to identify which of the servers, in its current configuration, can support additional databases. You need to ensure that your solution fulfills the companys security requirements while allowing for future database growth requirements. Which server and database combination can be used?

- A. Certkiller 3 with the OnlineReadOnly and HR databases
- B. Certkiller 4 with the TravelOnline and Storefront databases
- C. Certkiller 2 with the Storefront and TravelOnline databases
- D. Certkiller 2 with the Storefront and HR databases

Answer: D

QUESTION 37

You are configuring the storage on a new server that will hold the HR, Storefront, and TravelOnline databases. You need to ensure that the solution fulfills the company's recoverability requirements. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Place the boot partition and the system partition on a RAID-0 set.
- B. Place the TravelOnline database on its own RAID-0 set.
- C. Place the TravelOnline database on its own RAID-5 set.
- D. Place the pagefile, the boot partition, and the system partition on a hardware RAID-1

set.

E. Place the pagefile on its own RAID-0 set.

Answer: C, D

Explanation:

C and D meet the business requirements.

Not E: E does not meet the Recoverability requirements. Because in the scenario it asks for to be able to take complete or kernel memory dump. For that the pagefile must be large enough and must be on the boot volume.

QUESTION 38

You need to develop a solution to recover deleted reservations on Certkiller B. What should you do?

- A. Configure transactional replication to occur continuously.
- B. Configure snapshot replication to occur once every 30 minutes.
- C. Change the recovery model to bulk-logged.
- D. Create and maintain database snapshots of the Storefront database.

Answer: D

QUESTION 39

After the upgrade to SQL Server 2005, you need to mitigate the risks that are associated with users gaining access to ActiveX scripts or gaining direct hard disk access due to SQL Server Agent job settings. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Use an account that is a member of the sysadmin role to create and run all jobs. Do not use proxies for job steps. Allow the SQL Server Agent service account to be used to run all job steps.
- B. Use sp_revoke_proxy_from_subsystem to remove the UpgradedProxyAccount global proxy account from each subsystem that was granted access through the upgrade process.
- C. Make sure that the SQL Server Agent service is running as a domain account that is a member of the local administrators group.
- D. Add all users to the SQLAgentUserRole database role to eliminate the need for proxy accounts.
- E. Use dedicated user accounts for proxy accounts.

Answer: B,E

QUESTION 40

You are creating a backup plan for the TravelOnline and Storefront databases. You need to ensure that the plan fulfills the company's recoverability and performance requirements. What should you do?

- A. Change the recovery model to the full recovery model. Add a differential backup during a low-usage time in the middle of the business day. Keep the transaction log backups as they are currently configured.
- B. Keep the bulk-logged recovery model. Change the nightly full backups to differential backups. Keep the transaction log backups as they are currently configured.
- C. Keep the bulk-logged recovery model. Keep the nightly full backups as they are currently configured. Change the transaction log backups to occur once every 30 minutes.
- D. Change the recovery model to the full recovery model. Change the nightly full backups to differential backups. Keep the transaction log backups as they are currently configured.

Answer: A

Explanation:

Given the scenario text:

Recoverability

"The TravelOnline and Storefront databases are mission-critical. The current backup strategy includes:

Nightly full backups

Hourly transaction log backups

The bulk-logged recovery model"

And the following scenario text:

Recoverability

"All databases must be on fault-tolerant volumes.

Requirements after upgrading to SQL Server 2005 will include:

Full protection for data that is held in Large Value data types

Recovery to a specific point in time

Ability to recover data in a given field that is updated multiple times each day

Shortened recovery time"

Recovery to a specific point in time:

Only full the recovery model fully supports point-in-time recovery.

From BOL (Backing Up and Restoring Databases > Getting Started with Backup and Restore > Overview of the Recovery Models >):

"If a log backup contains any bulk operation, the database can be recovered only to the end of the log backup, not to a point in time or marked transaction within the log backup."

Only

Shortened recovery time:

Replacing the nightly full backups with differential ("Change the nightly full backups to differential backups.") would require many differential backups to restore. This increases and not shortens the recovery time.

QUESTION 41

You are upgrading Certkiller 1 to SQL Server 2005. You need to minimize the security risks that are associated with e-mail notifications. Which three actions should you perform? (Each correct answer presents part of the solution. Choose three.)

- A. Disable Database Mail through the SQL Server Surface Area Configuration tool.
- B. Add a POP3-compliant e-mail client.
- C. Disable SQL Mail through the SQL Server Surface Area Configuration tool.
- D. Configure e-mail functionality to use Database Mail.
- E. Upgrade Microsoft Outlook to the latest version on Certkiller 1.
- F. Remove Microsoft Outlook from Certkiller 1.

Answer: C,D,F

QUESTION 42

You need to reduce the attack surface on Certkiller 3 by disabling services that are not needed for fulfilling the companys technical requirements. Which three services should you disable? (Each correct answer presents part of the solution. Choose three.)

- A. SQL Server Agent service
- B. IIS Admin service
- C. SQL Server Browser service
- D. SQL Server Integration Services (SSIS) service
- E. Terminal Services service
- F. Server service

Answer: B,C,F

QUESTION 43

You need to configure Active Directory to implement the new password policy for the HR department. What should you do?

- A. Create a new child domain named hr.ad.margiestravel.com in the existing forest. Move the resources from the HR OU to this new domain. Add the appropriate security settings in the Default Domain Policy for this new domain.
- B. Add the appropriate security settings to the current Default Domain Policy.
- C. Add the appropriate security settings to the local security policy of Certkiller A.
- D. Set the SQL server check_policy and check_expiration options to On when creating all user accounts.

Answer: A

Topic 5, Certkiller .com, Scenario

BACKGROUND

Certkiller Overview

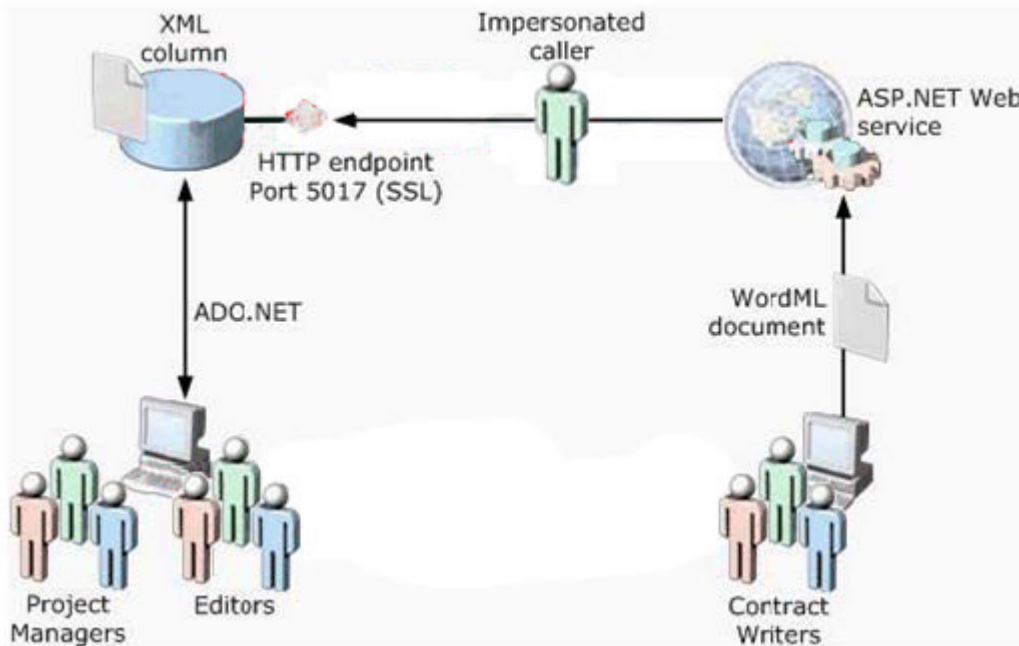
Certkiller ,Inc.,is a technical content development company that creates documentation and training materials for various software vendors.The company currently has 26 full-time employees at its central office in Seattle,and uses more than 100 external contract writers who work from home in various locations around the world.

Planned Changes

The company plans to implement a new, Web service-based solution that will facilitate the process by which remote contract writers submit work.

Currently, all work is submitted by e-mail as Microsoft Word document attachments, and it is stored in file shares on a file server named FP2. The new solution will allow work to be submitted to a Web service in WordML format and then stored in an xml column in a new database named Certkiller _projects.

The Web service will be hosted on an existing Web server in the perimeter network, and it will use impersonation to access the database server. A design for the new application solution is shown in the following diagram.



Problem Statements

Management has requested a review of the company's current security policies and wants improvement of the policies as much as possible order protect company data from unauthorized access or accidental deletion.

EXISTING DATA ENVIRONMENT

Databases

Certkiller , Inc ., currently has a single SQL Server 2005 database named Certkiller _biz, which is used to store the company's financial and personnel data. All objects in the Certkiller _biz database are owned by dbo.

Database Servers

Two database servers are located in the Seattle office: a primary server named Certkiller A on which the Certkiller _biz database is stored, and a warm standby server named Certkiller B to which the Certkiller _biz database is copied using log shipping. In the event of a server failure, the Certkiller _biz database on Certkiller B can be brought online manually, and the client application can be easily configured to use the standby server.

The hardware on both servers significantly exceeds the current requirements for database performance.

Database Client Computers

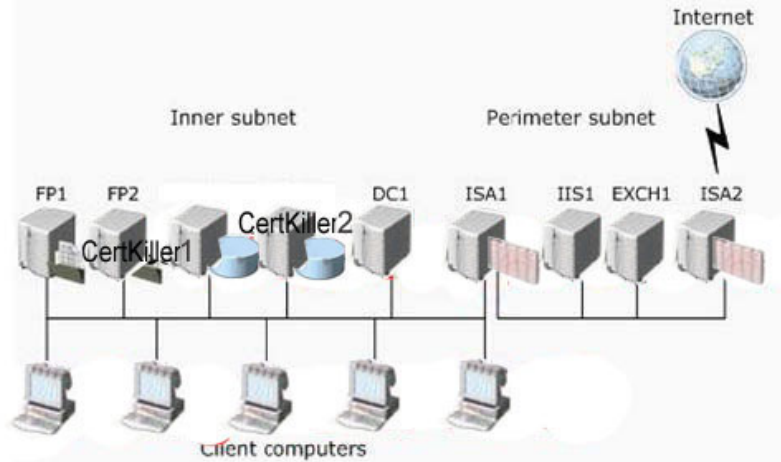
The Certkiller biz database is accessed by a managed client/server application that uses

ADO.NET 2.0 to connect to the database server.

EXISTING INFRASTRUCTURE

Network Infrastructure

The network consists of two subnets as shown in the following diagram.

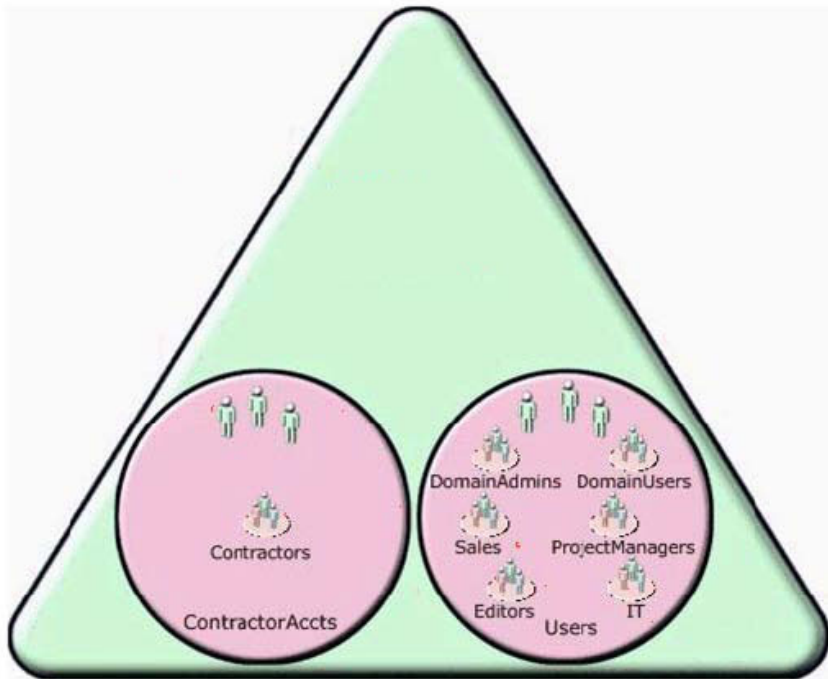


The network contains the servers that are described in the following table.

Server name	Server role
FP1	File and print server
FP2	File and print server
CertKiller1	SQL Server computer
CertKiller2	SQL Server computer
DC1	Domain controller
ISA1	Firewall server
ISA2	Firewall server
IIS1	Web server
EXCH1	Mail server

Directory Services Infrastructure

The Certkiller .com network consists of single Active Directory domain named Certkiller .com. The relevant organizational units (OUs), user accounts, and global groups in the domain are shown in the following diagram.



The accounts for contract writers are defined in the ContractorAccts OU. All other user accounts are defined in the Users container.

BUSINESS REQUIREMENTS

General Requirements

The new Certkiller _projects database will contain data for all current projects and archived content from previously completed projects. Writers can submit multiple revisions of a document, and all versions of the document must be maintained while the project is active. The final version is handed off to the customer at project completion. Writers and project managers must be able to use the data in archived projects to retrieve copies of documents that have been handed off to customers.

Availability

The current availability strategy for the Certkiller _biz database is considered adequate and must not be changed. However, the Certkiller _projects database must provide a level of availability that ensures that the database is automatically made fully available as quickly as possible in the event of a server failure or a storage array failure. In addition, the risk of data loss must be minimized.

No new hardware can be purchased for the availability solution. However, FP2, which is currently used to store project documents, will be decommissioned when the new application is implemented and can be used if necessary.

Occasionally, a large amount of data must be manually inserted into the Certkiller _biz database through a custom bulk load operation that requires the database to fail over to the warm standby server that is used for log shipping.

Recoverability

All system and user databases will be backed up using a combination of full, partial, and transaction log backups. A recovery plan must be created that specifies the steps that are necessary to use these backups when recovering from a server failure.

If the Certkiller _projects database is corrupted or destroyed, the recovery strategy must be

optimized to ensure that the filegroups containing current project data are recovered and made available as quickly as possible.

In addition to the regularly scheduled backups, the Certkiller _biz database must be recoverable to its previous state if an error occurs during the manual bulk load process.

TECHNICAL REQUIREMENTS

Security

Only the database administrator should be able to manage logins in the Certkiller _biz database.

The database administrator and the project managers must be able to manage SQL Server logins and users for access to the new Certkiller _projects database.

Employee salary information, which will be stored in the Certkiller _biz database, must be protected from unauthorized access.

All traffic to and from the HTTP endpoint that is used by the Certkiller _projects database must be encrypted by using SSL.

The principle of least privilege should be applied throughout the solution so that users are granted only the permissions that they actually require.

Maintainability

To minimize management overhead, the company's database administrator wants to minimize the number of separate database servers. Multiple servers can be used to provide enhanced availability, but the day-to-day maintenance of the databases should be focused on a single server whenever possible.

The planned Certkiller _projects database must use the full recovery model, and must contain three filegroups as shown in the following table.

Topic 5, Certkiller .com (8 Questions)

QUESTION 44

You need to specify the changes to the existing firewall configuration settings that are required by the HTTP endpoint that will be used by the Certkiller _projects database. What should you do?

- A. Create a Web publishing rule on ISA2 that allows HTTP traffic on port 5017 from IIS1 to the SQL Server computer.
- B. Create a Web publishing rule on ISA1 that allows HTTP traffic on port 5017 from IIS1 to the SQL Server computer.
- C. Create a Web publishing rule on ISA2 that allows HTTPS traffic on port 5017 from IIS1 to the SQL Server computer.
- D. Create a Web publishing rule on ISA1 that allows HTTPS traffic on port 5017 from IIS1 to the SQL Server computer.

Answer: D

QUESTION 45

There are currently no permissions set on the following four objects in the Certkiller _biz database: Sales.Customersa table containing customer dataSales.CustomerContactsa table containing customer contact dataSales.ContactLista view that retrieves customer data

from the Sales.Customers and Sales.CustomerContacts tables. Sales.GetContact is a stored procedure that retrieves data from the Sales.ContactList view. You need to permit the sales_employee database role to retrieve data by using the Sales.GetContact stored procedure. Which action or actions should you perform? (Choose all that apply.)

- A. Grant the SELECT permission on the Sales.Customers object to the sales_employee role.
- B. Grant the SELECT permission on the Sales.CustomerContacts object to the sales_employee role.
- C. Grant the SELECT permission on the Sales.ContactList object to the sales_employee role.
- D. Grant the EXECUTE permission on the Sales.GetContact object to the sales_employee role.

Answer: D

QUESTION 46

You plan to use a managed assembly in the Certkiller _projects database that includes a method to save the contents of an xml column as a local file. You need to import the assembly without granting it unnecessary permissions. Which permission level should you assign to the assembly?

- A. EXTERNAL_ACCESS
- B. the default permission level
- C. SAFE
- D. UNSAFE

Answer: A

QUESTION 47

You need to design a high-availability strategy for the Certkiller _projects database. Your design must fulfill all business and technical requirements. Which strategy should you use?

- A. log shipping
- B. failover clustering
- C. database mirroring
- D. replication

Answer: C

QUESTION 48

You are creating a management plan for the Certkiller _biz database. You need to specify the steps that must be performed to fail over to the secondary server in order to take the primary server offline for planned maintenance. The primary server will resume its role after the maintenance task has been completed. Which step or steps should you specify?

(Choose all that apply.)

- A. Create a full database backup of the database on the primary server.
- B. Back up the active transaction log on the primary server.
- C. Restore the database on the secondary server from the most recent full backup that was taken on the primary server.
- D. Apply, in sequence, existing unapplied transaction log backups to the secondary server.

Answer: B,D

QUESTION 49

You are creating a management plan for the Certkiller _biz database. You need to specify the action that must be taken before manually inserting data through a bulk load process. Your plan must fulfill the availability and recoverability business requirements, and it also must require minimal administrative effort. Which action should you specify?

- A. Create a full backup.
- B. Create a differential backup.
- C. Configure replication.
- D. Create a database snapshot.

Answer: B

Explanation: A differential backup meets the requirements.

Scenario texts:

"Database Servers

Two database servers are located in the Seattle office: a primary server named Certkiller A on which the Certkiller _biz database is stored, and a warm standby server named Certkiller B to which the Certkiller _biz database is copied using log shipping."

"Availability

The current availability strategy for the Certkiller _biz database is considered adequate and must not be changed. However, the Certkiller _projects database must provide a level of availability that ensures that the database is automatically made fully available as quickly as possible in the event of a server failure or a storage array failure. In addition, the risk of data loss must be minimized.

"

Not D: To "Create a database snapshot"; requires database mirroring. Certkiller _biz used log shipping not mirroring.

QUESTION 50

You are designing the data archiving strategy for the Certkiller _projects database. You need to identify the data that should be archived when a project is completed. Your design must ensure that minimal storage space is used, and it must fulfill the business requirements for the solution. What should you do?

- A. Archive all versions of all documents that belong to the completed project.
- B. Archive the earliest version of all documents that belong to the completed project.
- C. Archive the most recent version of all documents that belong to the completed project.
- D. Archive the earliest and most recent versions of the documents that belong to the completed project.

Answer: C

QUESTION 51

You are designing security for the HTTP endpoint for the Certkiller _projects application. You need to identify which login or logins should be granted the CONNECT permission on the HTTP endpoint. Which login or logins should you use? (Choose all that apply.)

- A. BUILTIN\UsersA local Windows group containing the Certkiller \DomainUsers domain global group
- B. ContractWritersA local Windows group containing the Certkiller \Contractors domain global group
- C. PMsA local Windows group containing the Certkiller \ProjectManagers domain global group
- D. EdsA local Windows group containing the Certkiller \Editors domain global group

Answer: B

Topic 6, Contoso, Scenario

BACKGROUND

Company Overview

Contoso, Ltd., provides database hosting services for companies in the health care industry. The company is now offering a new hosting service based on SQL Server 2005. The company will also offer various hosting service options that customers can purchase, which will provide high availability, recoverability, and other features. The company has a single office. Customers connect to the company network through private WAN connections and also over the Internet.

Planned Changes

The company plans to implement new SQL Server 2005 computers to host customer database. These servers will all run Windows Server 2003 Enterprise Edition and SQL Server 2005 Enterprise Edition.

Problem Statement

A threat analysis was run on a SQL Server 2005 computer named CertkillerA. The report that was generated after that threat analysis states that the server is at risk for SQL injection attacks.

EXISTING DATA ENVIRONMENT

Currently, Contoso, Ltd., has a database named Customers that is used to track customers. This database exists on a SQL Server 2005 computer named Certkiller A. Internal users access this database through a Web services application that allows users to provide details that are used to build ad hoc queries that are sent to the SQL Server

computer.

BUSINESS REQUIREMENTS

General Requirements

Each customer can host up to 10 databases. All databases for a given customer are always hosted on the same server.

Some customers will provide access to their databases through customer-developed Web applications. These applications accept data on a Web page and insert the data into the customer's database. The Web applications always connect to the appropriate SQL server computer through a private WAN link that is not accessible from the Internet.

One customer has a table named Patient, which holds patient information. Any optimization that occurs on the table should not affect current indexes. The SQL script that is used to create this table is shown in the following code segment.

```
CREATE TABLE Patients
```

```
(Patient ID int IDENTITY PRIMARY KEY CLUSTERED
```

```
, PatientName nvarchar (35)
```

```
, Address nvarchar (50)
```

```
, City nvarchar ()
```

```
, Region nvarchar (35)
```

```
, PostalCode nvarchar (35)
```

```
. Phone nvarchar (25))
```

The most common query to this table looks up the patient's name.

Customers are required to retain patient records, including details of all transactions with patients, for four years. However, customers want patients who have been inactive for one year to be removed from their database.

Performance

The company wants to maintain a minimal number of SQL Server 2005 instances and servers.

No company testing or development is allowed to occur on servers that host customer databases.

Availability

Some customers require high-availability solutions. When a customer is moved from a standard system to a high-availability solution, a short period of downtime is acceptable. Different solutions will be considered based on customer requirements.

A customer named Certkiller, Inc., needs a high-availability solution that will provide automatic failover.

Some customers require that their databases be replicated to a server that is located in another facility. These customers provide a dedicated high-speed WAN connection to the alternate facility, and they provide their own SQL Server computer at that facility. These customers might also make data modifications on the server at the alternate facility, and these changes must be replicated on the Contoso, Ltd., server. In the event that changes conflict, both server must retain the most recent change, regardless of which server the change was made to.

Recoverability

Some customers require a tape backup of their databases to be sent to the customer's office on a regular basis. The backup on this tape must be able to restore a single database without the use of any additional tapes or backups.

All databases that are hosted on company servers must receive a full backup each Saturday night, differential backups on other night, and transaction log backups once per hour. Backups must be made to a storage area network (SAN) that is located at the company office. After the Saturday night full backup, all differential and transaction log backups are deleted. After each night's differential backup, all transaction log backups are deleted. Customers can request that their database or databases be restored from these backups.

TECHNICAL REQUIREMENTS

Security

Customers must be able to configure their own SQL Server logins, and customers must have no access to other customers' databases. Customers also want to minimize the amount of administrative time that is required to configure logins and other settings. Some customers want to be able to access their databases by using only their own Active Directory domain accounts. These customers already maintain their own Active Directory domains.

Each SQL Server computer will run Windows Firewall. Written company policy requires the firewall to open the minimum number of ports that will allow the firewall to function properly.

Healthcare industry regulations state that patient information that is maintained in a database must be protected from disclosure to unauthorized individuals in the event that the database file or storage device is stolen or compromised.

Written company policy states that minimum permissions should always be used.

Maintainability

Customer will use SQL Server Management Studio to administer their database and other SQL Server configuration settings. Administration should take place on a different port than the one that is used for data access.

Topic 6, Contoso (10 Questions)

QUESTION 52

You need to design a hosting service option for customers who want to access their databases by using their own Active Directory domain accounts. What should you do?

- A. Design a hosting service option that duplicates each customers domain user account as SQL Server login account.
- B. Design a hosting service option that provides VPN-based connectivity from each customers network to the SQL Server computer that hosts that customers database or databases.
- C. Design a hosting service option that provides a dedicated server to each customer. Join that server to that customers Active Directory domain.
- D. Design a hosting service option that configures a unique instance of SQL Server 2005 for each customer. Configure that instance to use Integrated Windows authentication.

Answer: C

QUESTION 53

You need to make recommendations for maximizing the performance of queries based on patient names from the Patient table. What should you do?

- A. Recommend that an index should be created on the patient name and ID columns, and that the index fill factors should be set at 10%.
- B. Recommend that a nonclustered index should be created on only the patient name column.
- C. Recommend that a clustered index should be created on the patient name column.
- D. Recommend that a nonclustered index, which uses the INCLUDE clause for all columns, should be created on the patient name column.

Answer: B

QUESTION 54

You need to make recommendations or design changes to ensure that patient information is protected while it is stored in the database. What should you do?

- A. Recommend that customers should configure column-level encryption for all columns that contain patient information.
- B. Specify that a server administrator must encrypt all database files by using the Windows Encrypting File System (EFS).
- C. Recommend that all customer connections to SQL Server computers should be made by means of an IPSec tunnel.
- D. Specify that all SQL Server computers must contain IPSec-enabled network adapters.

Answer: A

QUESTION 55

You need to make recommendations for the archiving of data for inactive patients. What should you recommend?

- A. Header information for inactive patients should be moved to an archive table within the customers database.
- B. All data for inactive patients should be moved to a different database that has the same database schema as the customers database.
- C. Transaction details for inactive patients should be exported to a file.
- D. Transaction details for inactive patients should be moved to an archive table within the same database.

Answer: B

QUESTION 56

You need to design a hosting service option for customers who require periodic delivery of database tape backups. How should you design the hosting service option?

- A. Create a full copy-only database backup to tape on a regular basis.
- B. Perform a backup of the full-text catalog to tape on a regular basis.
- C. Back up all customer transaction log files every hour.
- D. Create differential database backups to tape on a regular basis.

Answer: A

QUESTION 57

DRAG DROP

Your boss, Mrs. Certkiller, wants you to design a recovery plan to use in the event that the SAN-based backups are required to restore a database.

What should you do?

Select and order the appropriate actions.

Actions, Select from these	Routing terms, place here
Restore the most recent full backup for the database.	Place first action here
Restore all differential backups for the database	Place second action, if any, here
Restore the most recent differential backup for the database.	Place third action, if any, here
Restore the most recent transaction log backup for the database.	Place fourth action, if any, here
Restore all transaction log backups since the most recent differential backup.	Place 5th action, if any, here

Answer:

Actions, Select from these	Routing terms, place here
	Restore the most recent full backup for the database.
Restore all differential backups for the database	Restore the most recent differential backup for the database.
	Restore all transaction log backups since the most recent differential backup.
Restore the most recent transaction log backup for the database.	Place fourth action, if any, here
	Place 5th action, if any, here

QUESTION 58

You need to design a strategy for identifying the number of instances that any one SQL Server 2005 computer will support. What should you do?

- A. Specify that each server must have one instance for each customer.
- B. Specify that each server must each have only one instance.
- C. Specify that each server must have one instance for each database that is hosted on that server.
- D. Specify that each server must have one instance for each customer who has one or more databases that are hosted on that server.

Answer: D

QUESTION 59

You need to ensure that customers will be able to administer their databases and other SQL Server settings. What should you do for each customer?

- A. Place the appropriate database user accounts into the customer db_datareader and db_datawriter fixed database roles.
- B. For each customer, place the appropriate logins into the sysadmin fixed server role.
- C. For each customer, create a local Windows user account on the appropriate SQL Server computer and place the account into the local Administrators group.
- D. For each customer, create a local Windows user account on the appropriate SQL Server computer and place the account into the local Server Operators group.

Answer: B

QUESTION 60

You need to design a high-availability hosting service solution for the company that fulfills their business requirements. What should you do?

- A. Design a hosting service option that replicates each of their customer databases to a subscription SQL Server computer. Use the same subscription server for all highly available customer databases.
- B. Design a hosting service option that provides redundant power supplies, network adapters, and cooling fans in the server that hosts the customer databases.
- C. Design a hosting service option that places the customer databases on a RAID-1 volume.
- D. Design a hosting service option that places the customer databases on a RAID-5 volume.
- E. Design a hosting service option that places the customer databases in a clustered instance of SQL Server 2005.

Answer: E

QUESTION 61

You need to make recommendations to help customers who use Web applications mitigate potential SQL Server security risks. What should you do?

- A. Recommend that data on the customers SQL Server computer should be encrypted.
- B. Recommend that the customers SQL Server computer should be placed behind a hardware firewall.
- C. Recommend that the customers Web server should be placed behind a firewall.
- D. Recommend that the customers Web application should access data only through stored procedures.

Answer: D

Topic 7, Coho Vineyard & Winery, Scenario

BACKGROUND

Company Overview

Coho Vineyard & Winery began as a small business that supplied wine to local retailers and restaurants. The company has grown substantially, and it now sells wine to customers all over the world.

The company is based in California. The main office is located in San Francisco, and the vineyard is 60 miles to the north.

Users at the vineyard access the Sales database by using an ASP.NET Web application. Customers order cases of wine by mailing or faxing a sales order form, and the details are entered manually into the database.

Planned Changes

The company recently decided to create a customer relationship management (CRM) application that will use a SQL Server 2005 database. Customer data that is currently held in the Sales database will be moved to the new CRM database, and a stored procedure will be added to the Sales database to retrieve customer data from the CRM database by using the security credentials of the original caller.

The CRM database will be used for all company operations. The most frequently accessed table will be the CustomerData.Customers table. The definition of this table is shown in the following code statement.

```
CREATE TABLE CustomerData.Customers
(
    Customer ID int PRIMARY KEY CLUSTERED,
    FirstName nvarchar (25) NOT NULL,
    LastName nvarchar (25) NULL,
    MiddleName nvarchar(25) NULL
)
```

During the company's growth, small departmental databases have been created to store specific kinds of data. The company plans to migrate these databases to SQL Server 2005 and centralize them into a single data center that will include the Sales and CRM databases.

The company recently created a central IT department. The IT department has deployed a

Windows Server Update Services(WSUS) server named WSUS1 to keep all computers in the main office up-to-date with the latest service packs and patches. All computers in the main office will be configured to download from this server.

Problem statements

The company uses log shipping to provide a redundant copy of the Sales database on second server. This secondary server must be configured to allow the swapping of log shipping roles. The two servers have not previously swapped log shipping server roles.

EXISTING DATA ENVIRONMENT

Databases

The Sales database is configured for log shipping. The risk of minor data loss in the event of server failure is tolerable because sales orders can be manually re-entered from the paper forms.

There are three small departmental databases. Each of these databases has only a small number of users. These databases are described in the following table.

Database	Description
DeliveryVans	An MSDE database that contains details about the company' s fleet of delivery vans. It is used by the shipping department to track vehicle service history.
AirlinePreferences	A Microsoft Access database that is used by the administration department when booking business travel for executives.
SeasonalContractors	A Microsoft Excel spreadsheet that contains contact details for temporary workers who are employed for the harvest season.

Database Servers

Currently there are three production SQL Server computers named Certkiller A, Certkiller B, and Certkiller C.

- . Certkiller A hosts the Sales database
- . Certkiller B is used as a standby server for log shipping
- . Certkiller C is configured as a monitor server for log shipping

Certkiller B will be used to host the CRM database.

Three will be used to host the CRM database.

Three test servers named Certkiller TST1, Certkiller TST2, and Certkiller TST3 are configured identically to the respective production servers. Transact-SQL scripts that duplicate core functionality are stored on the three test servers. These scripts can be used to test new code or configurations before deployment to the production environment.

The WSUS configuration includes the WSUS computer groups shown in the following table.

Computer group	Members
SQL Production	CertKiller1 CertKiller2 CertKiller3
SQL Test	CertKillerTEST1 CertKillerTEST2 CertKillerTEST3

Database Client Computers

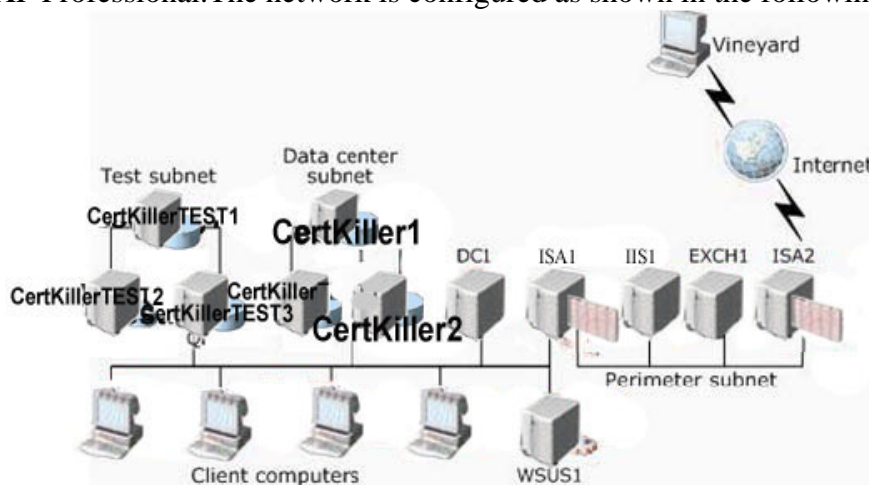
An ASP.NET application is used to interact with the Sales database. This application can be accessed from computers on the main office network and over the Internet by authenticated users at the vineyard.

The code in the ASP.NET application runs as a domain account named COHO\SaleWed uses Windows authentication to connect to the Sales database. One of the most commonly used pages in the ASP.NET application retrieves order details by appending the OrderID value that is entered into a text box to the following string: '?SELECT*FROM SalesData.Order WHERE OrderID=?'

EXISTING INFRASTRUCTURE

Network Infrastructure

All servers run Microsoft Windows Server 2003 ,and all client computers run Windows XP Professional.The network is configured as shown in the following diagram.



Directory Services Infrastructure

The company network consists of a single Active Directory domain. A Group Policy object (GPO) based on the WSUS administrative template has been created and assigned to all computers.

BUSINESS REQUIREMENTS

General Requirements

Sales order records have a status field, which can have one of the following settings:

- . 1 (received)
- . 2 (being processed)
- . 3 (delayed)
- . 4 (completed)

A trigger is used to set the status to 4 when delivery is completed. Users can retrieve and update incomplete orders through a view, but they must not be able to complete orders.

through the view.

Individual order records can be retrieved by data through a stored procedure. However, as more sales orders have been added, the size of the SalesData.Orders table has increased. The server administrator has requested that a data archiving solution be created so that records for orders that are older than six months are removed from the table. However, the archived records must still be stored in the same database, and users must be able to retrieve and update them.

Availability

The CRM database must be protected by a high-availability strategy that minimizes the risk of data loss in the event of a server failure and that provides automatic failover. Failover must take no longer than it currently does. NO additional hardware can be purchased for the high-availability strategy.

Recoverability

The departmental databases can be adequately protected with a full backup once each day, but the Sales and CRM databases must be backed up according to the schedule shown in the following table.

Backup name	Backup type	Time
FullBackup	Full	0:00 midnight
LogBackup1	Log	04:00
LogBackup2	Log	08:00
DiffBackup1	Differential	12:00 noon
LogBackup3	Log	16:00
LogBackup4	Log	20:00

TECHNICAL REQUIREMENTS

Security

Database backups must be performed by the same users that back up the Windows Server 2003 computers. For this purpose a login for the Backup Operators local group will be created as standard in each SQL Server instance.

The risk of SQL injection attack through the ASP.NET application must be minimized. All SQL Server services must run using service accounts that have only the minimum privileges.

All database users must have only the minimum permissions required to perform their job.

Maintainability

Departmental databases must continue to be maintained by an appropriate departmental employee, but all server-level operations must be managed by the IT department.

The number of SQL Server instances must be kept to a minimum in order to reduce server management overhead.

The service accounts that are used by all database services must be managed centrally.

All service pack and patches must be applied as quickly as possible, but only after compatibility with production server configuration is successfully tested.

All service pack and patches must be applied as quickly as possible, but only after compatibility with production server configuration is successfully tested.

Performance

To minimize the impact of page splits during online transaction processing (OLTP) operations, all indexes in the Sales and CRM databases must be created with a fill factor of 75 percent.

Topic 7, Coho Vineyard & Winery (9 Questions)

QUESTION 62

You need to configure the Sales database to fulfill the backup requirements. Which Transact-SQL statement should you use?

- A. ALTER DATABASE Sales SET RECOVERY SIMPLE
- B. EXEC sp_dboption 'autoclose', 1
- C. ALTER DATABASE Sales SET RECOVERY FULL
- D. EXEC sp_dboption 'trunc. log on chkpt.', 1

Answer: C

QUESTION 63

You are configuring Certkiller A so that the distributed query in the Sales database can access data in the CRM database on Certkiller B. You create a linked server for Certkiller B, and you create a linked server login that uses impersonation. Now, you need to ask the network administrator to configure Certkiller

A. Which two tasks should you ask the administrator to perform? (Each correct answer presents part of the solution. Choose two.)

- A. Add the user account that is used by the SQL Server service to the local Administrators group.
- B. Enable the Do not trust this user for delegation Active Domain property for the user account that is used by the SQL Server service.
- C. Create a Service Principal Name (SPN) for the user account that is used by the SQL Server service.
- D. Enable the Trusted for delegation Active Domain property for the user account that is used by the SQL Server service.

Answer: C,D

QUESTION 64

You design the view through which users can retrieve and update active orders in the Sales database as shown in the following code segment. CREATE VIEW OrderData.ActiveOrdersASSELECT OrderID, OrderDate, CustomerID, StatusFROM OrdersWHERE Status IN (1, 2, 3) You need to modify the view definition to enforce the business requirements for updating order status. What should you do?

- A. Add a WITH ENCRYPTION clause.
- B. Add a WITH SCHEMABINDING clause.
- C. Add a WITH VIEW_METADATA clause.
- D. Add a WITH CHECK OPTION clause.

Answer: D

QUESTION 65

DRAG DROP

Your boss, Mrs. Certkiller, wants you to document the steps that are necessary to ensure that the servers in the data center are updated when service packs and patches become available. Mrs. Bills wants to ensure that the risk of service interruption due to update incompatibilities is minimized.

You need to identify the steps that your patch management should include to install and verify compatible updates.

What should you do?

Select and order the appropriate actions.

Actions, Select from these	Routing terms, place here
Use the WSUS console to approve compatible updates for the SQL Production computer group	Place first action here
On each SQL Server 2005 computer download SQL Server updates from the Microsoft SQL Server Web site	Place second action if any, here
Use the WSUS console to approve updates for the SQL Test computer group.	Place third action, if any, here
Use the WSUS Group Policy template to disable client-side targeting.	Placea fourth ction, if any, here
Run the validation scripts on the test servers to verify correct operation.	Placea 5th ction, if any, here
Use the WSUS console to verify that updates have been installed on the test servers.	Place 6th action if any, here
Use the WSUS console to verify that updates have been installed on the production servers.	Placea 7th ction, if any, here

Answer:

Actions, Select from these	Routing terms, place here
On each SQL Server 2005 computer download SQL Server updates from the Microsoft SQL Server Web site	Use the WSUS console to approve updates for the SQL Test computer group.
	Use the WSUS console to verify that updates have been installed on the test servers.
	Run the validation scripts on the test servers to verify correct operation.
Use the WSUS Group Policy template to disable client-side targeting.	Use the WSUS console to approve compatible updates for the SQL Production computer group
	Use the WSUS console to verify that updates have been installed on the production servers.
	Place 6th action if any, here
	Place 7th action, if any, here

Explanation:

Give the following scenario texts:

Given the following text:

Three test servers named CERTKILLER1, CERTKILLER2, and CERTKILLER3 are configured identically to the respective production servers. Transact-SQL scripts that duplicate core functionality are stored on the three test servers. These scripts can be used to test new code or configurations before deployment to the production environment.

All service pack and patches must be applied as quickly as possible, but only after compatibility with production server configuration is successfully tested.

Testing in change in a Test environment before applying them to a Production environment minimizes risk and thus it's widely accepted as a Best Practice.

The Test environment server configuration mirrors the Production environment server configuration.

QUESTION 66

You are planning the configuration of Certkiller A. You need to use the most appropriate Windows account for the SQL Server service. Which account should you use?

- A. a domain user account
- B. a local user account
- C. the NETWORK SERVICE account
- D. the LOCAL SYSTEM account

Answer: A

QUESTION 67**DRAG DROP**

Your boss, Mrs. Certkiller, wants you to restore data from a backup. The data files in the Sales database were lost at 17:00. The transaction log is still available. You back up the transaction log to a backup named Tailbackup, using the NO_TRUNCATE option. The regularly scheduled backups are also available.

You need to identify which backups to restore and the correct order which they must be restored in order to minimize the number of restore operations.

What should you do?

Select and order the appropriate backups.

Actions, Select from these	Routing terms, place here
TailBackup	Place first action here
DifBackup1	Place second action, if any, here
FullBackup	Place third action, if any, here
LogBackup1	Placea fourth ction, if any, here
LogBackup2	Placea 5th ction, if any, here
LogBackup3	Placea 6th ction, if any, here

Answer:

Actions, Select from these	Routine terms, place here
	FullBackup
	DifBackup1
	LogBackup3
LogBackup1	TailBackup
LogBackup2	Placea 5th ction, if any, here
	Placea 6th ction, if any, here

QUESTION 68

You need to implement a high-availability solution for the CRM database to fulfill the availability requirements. Which high-availability technology should you use?

- A. database mirroring
- B. database snapshot
- C. replication
- D. log shipping

Answer: A

QUESTION 69

You plan to create a unique nonclustered index on the CustomerID, LastName, and FirstName columns of the CustomerData.Customers table in the CRM database. To aid in estimating the space requirements for the index, you identify the following variables: Estimated number of rows Clustered index key Number of columns in the index Fixed data size Number of variable-length columns Average variable-length data size You need to identify the most significant additional variable that will increase the estimated index size. Which additional variable should you identify?

- A. current number of rows
- B. null bitmap
- C. fill factor

D. automatically generated uniqueifier value

Answer: C

QUESTION 70

You need to identify the most appropriate archiving strategy for the SalesData.Orders table in the Sales database. The archiving strategy must have the minimum impact on performance. What should you do?

- A. Create a table named ArchivedData.Orders. Partition the SalesData.Orders table and its indexes, and use MERGE, SPLIT, and SWITCH functions every three months to move old order data into ArchivedData.Orders.
- B. Create a table named ArchivedData.Orders. Every three months use an INSERT statement to copy data from the SalesData.Orders table into ArchivedData.Orders, and then use a DELETE statement to remove archived data from SalesData.Orders.
- C. Create a database snapshot of the Sales database every three months, and then use a DELETE statement to remove archived data from the SalesData.Orders table.
- D. Back up the Sales database to tape every three months, and then use a DELETE statement to remove archived data from the SalesData.Orders table.

Answer: A

QUESTION 71

DRAG DROP

You plan to use certificate-based authentication for database mirroring of the CRM database between a principal database on Certkiller 2 and a mirror database on Certkiller 3. You plan to create the objects shown in the following table.

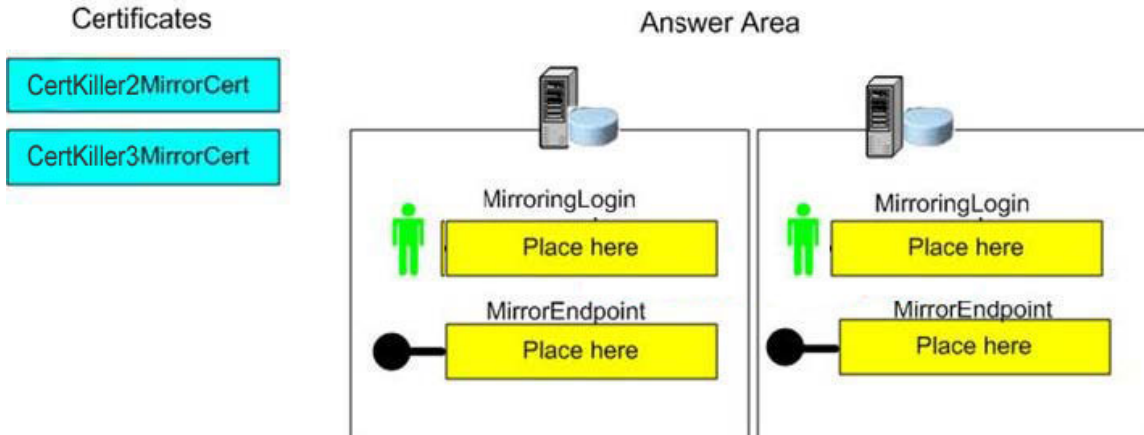
Server	Object type	Object name
CertKiller2	Certificate	CertKiller2MirrorCert
CertKiller2	Login	MirroringLogin
CertKiller2	Mirroring endpoint	MirroringEndpoint
CertKiller3	Certificate	CertKiller3MirrorCert
CertKiller3	Login	MirroringLogin
CertKiller3	Mirroring endpoint	MirroringEndpoint

You plan to export the Certkiller 2MirrorCert certificate and copy it to Certkiller 3, and you plan to export the Certkiller 3MirrorCert certificate and copy it to Certkiller 2.

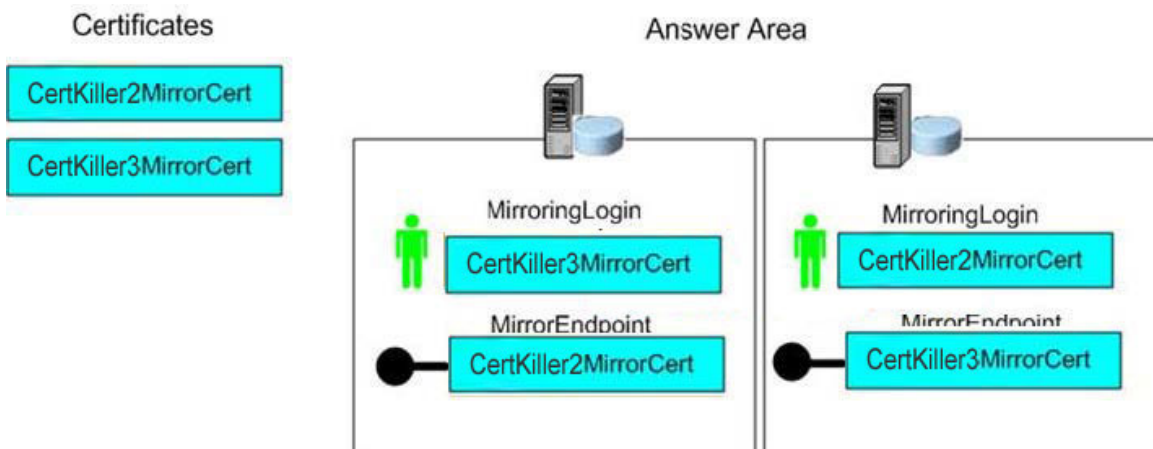
You need to associate the certificates with the appropriate endpoints and logins.

What should you do?

Drag Drop question



Answer:



QUESTION 72

You are reviewing the code that is used to retrieve order data in the ASP.NET Web application. You need to update the application to meet the security requirements. What should you do?

- A. Create a view to retrieve the order data, and replace the table name with the view name in the ASP.NET code.
- B. Create an HTTP endpoint that has BATCHES enabled, and modify the ASP.NET code to connect to the HTTP endpoint.
- C. Create a SQL Server login that has a complex password, and modify the ASP.NET code to connect by using the SQL Server login.
- D. Create a stored procedure to retrieve the order data, and modify the ASP.NET code to call the stored procedure by using parameters.

Answer: D

QUESTION 73

You need to migrate the DeliveryVans, AirlinePreferences, and SeasonalContractors databases into the data center. What should you do?

- A. Install a separate instance of SQL Server 2005 for each of the databases on a single server.
- B. Create a SQL Server database for each of the databases in a single instance of SQL Server 2005.
- C. Import the data from each of the databases into a single database in an instance of SQL Server 2005.
- D. Install a default instance of SQL Server 2005 on three separate servers. Use one server for each of the databases.

Answer: B

Topic 8, Southridge Video, Scenario

Company Overview

Southridge Video is a video rental company. The company has a main office and 250 video rental locations in North America. It also rents videos over the Internet, with delivery by mail.

Planned Changes

The company plans to develop a new mission-critical accounts database at the main office to maintain account information for the Internet rentals business. This database must automatically fail over when the primary server fails. In addition, the company wants to configure an additional server so that incorrect updates and deletions can be corrected using the information on the additional server. No single server failure should prevent the ability to correct data errors. Four new server computers will be available for this mission-critical accounts database.

A new replication system will be implemented so that store employees can view the list of videos that are available at other company stores within 20 miles. Store employees should be able to update only their own store's records.

Problem Statements

The database named rental_history is extremely large and is becoming slower as it increases in size. Investigation revealed that the appropriate indexes already exist in this database. The most common report includes the customer name and city from the customer table; the store name, city, and store number from the store table; the rental date from the rental table; and the video name and genre from the videotitle table. Query statistics indicate that the joins that are required to run the other common reports, which frequently include fields from all tables, are negatively affecting the performance on this database. The rental_history database does not allow any changes to the data. There is ample time to import the data once per month.

EXISTING DATA ENVIRONMENT

Database Servers

Southridge Video recently upgraded all of their SQL Server 2000 computers to SQL Server 2005 running on Microsoft Windows Server 2003. The SQL Server computers are described in the following table.

Server	Location	Database	Function
CertKillerA	Main office	acct1	Holds secure financial information
CertKillerB	Main office	internet_rentals	Holds information on Internet requests and current rentals
		rental_history	Readonly database that holds all historical data from the internet_rentals and all store_nnn_rentals databases
SQLnnn (where nnn is the store's ID)	All stores	store_nnn_rentals	Each store has its own SQL Server computer and database to track its respective video details, availability, and rentals. All database object definitions are identical and are named by the corporate store ID.
		store_nnn_accts	Each store has its own accounts database to track customer accounts.

All store SQL Server computers are configured for SQL Server and Windows Authentication mode. Certkiller A and Certkiller B are configured for only Windows Authentication mode.

All store SQL Server computers have used the same password for the sa login ID for the past two years to facilitate access by any of five mobile database administrators who are responsible solely for managing the store servers.

Some nonutilized production level servers can be used if required.

Database

The largest table on Certkiller A has a clustered index and is approximately 2 GB in size. No changes have been made to the default settings for the tempdb database on Certkiller A.

Currently, each store_nnn_rentals database is configured to use a single filegroup.

Queries in the internet_rentals database are frequently sorted by the videotitle column.

Database Client Computers

Client computers in the stores and in the main office run either Windows XP Professional, Windows 2000 Professional, Windows NT Workstation 4.0, or Windows 98. All client computers must be able to function with all servers. Upgrading the client computers is currently not possible.

EXISTING INFRASTRUCTURE

Network Infrastructure

All stores and the main office are connected by high-speed networks.

Active Directory Infrastructure

The Southridge Video network consists of a single Active Directory domain named

ad.southridgevideo.com. All user accounts and servers exist in this domain. Windows user accounts are used to grant access to the SQL Server computers. A Windows group named SQLManagers has login privileges on Certkiller A and Certkiller B and is a member of the sysadmin role on these two SQL Server.

Recoverability

All rental stores currently perform full backups nightly and transaction log backups four times per day on the store_nnn_rentals database.

The internet_rentals database has full backups nightly and transaction log backups every hour, on the hour, from 08:00 to 17:00. At 12:00 noon a differential backup is performed.

Security

The SQL Server Agent service on Certkiller A is currently running as a domain account named SQL Server that is a member of the local administrators group and is a member of the sysadmin role.

BUSINESS REQUIREMENTS

General Requirements

Development, testing, and error checking must not be performed on the main production database.

Performance

The process of building indexes should be optimized for best performance.

The company plans to use the SORT_IN_TEMPDB option when creating all indexes.

The purchase of new hard disks has been approved to support this plan.

The internet_rentals database is a very busy database. To improve performance, a separate read-only version of the database should be created to run reports and perform data analysis. This version must be kept synchronized with the writeable version of the internet_rentals database with as latency as possible.

Availability

All databases must be able to withstand a single drive failure.

The information in the read-only copy of the internet_rentals database must be available even when the internet_rentals database fails.

Recoverability

The four busiest stores have had server failures that caused business to cease until the database could be brought back online. Lost revenues have been significant enough for the company to decide that these servers must be available 24 hours a day, seven days a week, and must automatically fail over in the event of a server failure. All user and system databases on these servers should be fault tolerant. Performance must be maintained or improved, even when a single server fails.

A database recovery policy must be created. This policy should include steps to be performed on a regular basis to ensure successful database restores. It should also include documentation regarding the different types of restores that are possible and the costs and benefits of each type of restore.

TECHNICAL REQUIREMENTS

Security

Windows Authentication mode is now required on all corporate SQL Server computers.

All accounts should have only the minimum permissions that are necessary.

The rental_agents Windows group should have read, insert, and update permissions on 10 of the tables in the internet_rentals database. No other permissions are required.

Database administrators who work in the main office must be able to create and manage databases and manage all server settings and security, including logins on Certkiller A and Certkiller B. Only these database administrators should be able to change server settings and create database objects on servers in the main office.

Any changes that are made to database objects or the SQL Server configuration on any server must generate an e-mail message that is sent to managers and that includes the Windows account name of the user who made the change.

The five mobile database administrators who manage the servers in the stores must be able to create and manage databases and to manage all SQL Server settings and security, including logins, on all store SQL Server computers.

Reads and writes of sensitive data in several tables in the acct1 database should be tracked with as little effect on performance as possible.

All data retrieved from Certkiller A must be encrypted while on the network.

Maintainability

Certkiller A must forward SQL Server events to Certkiller B.

Topic 8, Southridge Video (12 Questions)

QUESTION 74

You need to create the database recovery policy. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. For each physical database, test the restore process in the existing physical location.
- B. Test online restores to your production databases at different hours to verify restore times and functionality on a busy server.
- C. Based on different data loss scenarios, confirm the amount of time each type of restore will take by restoring to a nonproduction server.
- D. Document the restore processes for recovering to a specific time or transaction while testing the restores.

Answer: C,D

QUESTION 75

You need to review the current storage system and decide on the best configuration for the tempdb database on Certkiller A to improve tempdb performance. Your solution must ensure that company requirements and policies are fulfilled. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a RAID-1 set, and move tempdb to this drive set.
- B. Create a RAID-0 set, and move tempdb to this drive set.
- C. Set the starting size of tempdb to 3 GB.
- D. Create a RAID-0 set, and move tempdb and the user database with the largest index to this drive set.
- E. Disable automatic file growth on tempdb.

Answer: A,C

QUESTION 76

You need to secure the Windows account that is being used by the SQL Server Agent service on Certkiller A, and you want to use the minimum amount of administrative effort. You remove the account named SQLService from the local administrators group on Certkiller

A. What should you do next?

- A. Run the SQL Server Agent service as the built-in local system account.
- B. Run the SQL Server Agent service as the network service account.
- C. Grant the SQLService account all necessary rights and permissions on the SQL Server directory structure and registry.
- D. Add the SQLService account to the SQLServer2005SQLAgentUser\$InstanceName group.

Answer: D

QUESTION 77

DRAG DROP

Your boss, Mrs. Certkiller, wants you to resolve a potential loss of data. Jack discovered that all inserts and updates in the internet_rentals database from the last two days were lost due to an inadvertent deletion at 11:45. It is now 11:59.

You need to do a point-in-time restore to recover the lost data. You want to limit the amount of data loss after the restore is completed. Your database, transaction log, and all backups are available. You take the database offline.

What should you do next?

Select and order the appropriate actions.

Actions, Select from these

Restore the most recent full backup, and use the WITH NORECOVERY option

Restore all but the final transaction log backups that have occurred since the most recent differential backup, and use the WITH NORECOVERY option,

Restore the final transaction log backup, and use the WITH RECOVERY and STOPAT options.

Back up the active portion of the transaction log.

Restore the most recent differential backup, and use the WITH NORECOVERY option.

Restore all but the final transaction log backups that have occurred since the most recent full backup, and use the WITH NORECOVERY option.

Routing terms, place here

Place first action here

Place second action, if any, here

Place third action, if any, here

Place fourth action, if any, here

Place 5th action, if any, here

Place 6th action, if any, here

Answer:

Actions, Select from these

Restore all but the final transaction log backups that have occurred since the most recent differential backup, and use the WITH NORECOVERY option,

Restore the most recent differential backup, and use the WITH NORECOVERY option.

Routing terms, place here

Back up the active portion of the transaction log.

Restore the most recent full backup, and use the WITH NORECOVERY option

Restore all but the final transaction log backups that have occurred since the most recent differential backup, and use the WITH NORECOVERY option,

Restore the final transaction log backup, and use the WITH RECOVERY and STOPAT options.

Place 5th action, if any, here

Place 6th action, if any, here

Explanation:

The issue with this question is that we are missing some key data, namely are the times given question on a 24 or 12 hour clock:

Your boss, Mrs. Jack Bill, wants you to resolve a potential loss of data. Jack discovered that all inserts and updates in the internet_rentals database from the last two days were lost due to an inadvertent deletion at 11:45. It is now 11:59.

Given the ambiguity of the clock there are a few different means:

Question time	12 hr	24 hr
11:45	11:45 am or 11:45 pm	11:45 (11:45 am)
11:59	11:59 am or 11:59 pm	11:59 (11:59 am)

Given the following text on page 85:

The internet_rentals database has full backups nightly and transaction log backups every hour, on the hour, from 08:00 to 17:00. At 12:00 noon a differential backup is performed.

I assume the following backup plan

24 hr	Backup command
1	none
2	none
3	none
4	none
5	none
6	none
7	none
8	Transaction log
9	Transaction log
10	Transaction log
11	Transaction log
12	Transaction log & Differential
13	Transaction log

14	Transaction log
15	Transaction log
16	Transaction log
17	Transaction log
18	Full - maybe; no exact time given
19	Full - maybe; no exact time given
20	Full - maybe; no exact time given
21	Full - maybe; no exact time given
22	Full - maybe; no exact time given
23	Full - maybe; no exact time given

I will give 2 different answers, one for 11:45 am (11:45 24hr) and another for 11:45 pm (23:45 24hr).

1) Answer for 11:45 am (11:45 24hr) scenario:

FIRST:

Backup the active portion of the transaction log.

SECONDD:

Restore the most recent full backup, and use the WITH NORECOVERY option.

THIRD:

Restore all but the final transaction log backups that have occurred since the most recent FULLbackup, and use the WITH NORECOVERY option.

FOURTH:

Restore the final truncation log backup, and use the WITH RECOVERY and STOPAT options.

2) Answer for 11:45 pm (23:45 24hr)) scenario:

FIRST:

Backup the active portion of the transaction log.

SECONDD:

Restore the most recent full backup, and use the WITH NORECOVERY option.

THIRD:

Restore the most recent differential backup, and use the WITH NORECOVERY option

FOURTH:

Restore all but the final transaction log backups that have occurred since the most recent DIFFERENTIAL backup, and use the WITH NORECOVERY option.

FIFTH:

Restore the final truncation log backup, and use the WITH RECOVERY and STOPAT options.

QUESTION 78

A rental agent named Eric is a member of the Windows rental_agents group. He was inadvertently given more permissions than he should have as a member of the rental_agents group. You confirm that the other rental agents do not have excessive permissions. You use the EXECUTE AS statement to impersonate Eric, and you run six different SQL commands in the internet_rentals database. You need to identify which of the commands have results that show excessive permissions for Eric. Which two commands should you identify? (Each correct answer presents part of the solution. Choose two.)

- A. SELECT name FROM sys.tables WHERE HAS_PERMS_BY_NAME(name, 'OBJECT', 'SELECT') = 1; returns 10 rows
- B. SELECT HAS_DBACCESS('internet_rentals'); returns a value of 1
- C. SELECT HAS_PERMS_BY_NAME('sa', 'LOGIN', 'IMPERSONATE'); returns a value of 0
- D. SELECT IS_SRVROLEMEMBER ('serveradmin'); returns a value of 1
- E. SELECT name FROM sys.tables WHERE HAS_PERMS_BY_NAME(name, 'OBJECT', 'DELETE') = 1; returns 10 rows

Answer: D,E

QUESTION 79

You need to implement encryption for Certkiller A based on the companys technical requirements. What should you do?

- A. Implement the Server (Request Security) IPSec policy on Certkiller A.
- B. Enable encrypted connections for the SQL Server instance with the ForceEncryption option enabled.
- C. Create the acct1 database, and encrypt all data.
- D. Enforce the use of Kerberos authentication on Certkiller A.

Answer: B

QUESTION 80

You need to define an authentication system for the main office database administrators. The setup should require the minimum amount of administrative effort. The authentication environment must fulfill the companys security requirements. What should you do?

- A. Create a SQL Server login with Windows Authentication for each main office database administrator. Add all of these logins to the db_owner role in each database.
- B. Create a SQL Server login with SQL Server Authentication for each main office database administrator. Add all of these logins to the sysadmin role.

- C. Create a Windows global group named DBAdmins. Add each main office database administrators Windows user account to the Windows DBAdmins group. Create a SQL Server login with Windows Authentication for the group. Add the group to the serveradmin fixed server role.
- D. Add each main office database administrators Windows user account to the Windows SQLManagers group.

Answer: D

QUESTION 81

You need to strengthen the security settings and standards for the store SQL Server computers. Your solution must fulfill the companys security and manageability requirements. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Add the user accounts of the mobile database administrators to the Windows SQLManagers group. Create a SQL Server login for that group to each stores SQL Server computer. Add that group to the sysadmin fixed server role.
- B. Create a domain global group for the user accounts of the mobile database administrators. Add the group to each stores SQL Server computer. Add the group to the sysadmin fixed server role.
- C. Add the user accounts of the mobile database administrators to the Windows SQLManagers group. Add the group to each stores SQL Server computer. Add the group to the serveradmin server role.
- D. Change all store SQL Server computers to Windows Authentication.
- E. Create a domain global group for the user accounts of the mobile database administrators. Add the group to each stores SQL Server computer. Add the group to the serveradmin fixed server role.

Answer: C,E

QUESTION 82

You need to design a high-availability solution for the four busiest stores. You want to use as few servers as possible, and you need to fulfill the companys performance requirements. What should you do?

- A. Create a failover cluster with three cluster nodes, and two virtual servers on two Windows Clustering groups.
- B. Create a failover cluster with two cluster nodes, and two virtual servers on two Windows Clustering groups.
- C. Configure log shipping for the four store_nnn_rentals databases.
- D. Create a database mirror for each of the four store_nnn_rentals databases, and configure each mirrored database to use a witness server and full transaction safety.

Answer: A

QUESTION 83

You need to make recommendations for tracking usage on the acct1 database to fulfill the companys security requirements. What should you recommend?

- A. Set up the Security Audit event category in SQL Trace to track the Audit Schema Object Access event class.
- B. Create DDL triggers on all sensitive tables.
- C. Set up the Security Audit event category in SQL Trace to track the Audit Database Object Management event class.
- D. Create DML triggers on all sensitive tables.

Answer: A

QUESTION 84

You need to implement the new read-only copy of the internet_rentals database on SQL2 according to the companys performance and availability requirements. What should you do?

- A. Install a new SQL Server 2005 computer. Create a new database on that server, and configure snapshot replication between internet_rentals and the new database.
- B. Install a new SQL Server 2005 computer. Create a new database on that server, and configure merge replication between internet_rentals and the new database.
- C. Create a new database on SQL2. Configure transactional replication between internet_rentals and the new database.
- D. Install a new SQL Server 2005 computer. Create a new database on that server, and configure transactional replication between internet_rentals and the new database.
- E. Install a new instance of SQL Server 2005 on SQL2. Create a new database, and configure transactional replication between internet_rentals and the new database.

Answer: D

QUESTION 85

You need to improve the performance for the following query in the internet_rentals database. `SELECT videotitle, upc_no, retailprice FROM srvideo.videotitle WHERE releasedate BETWEEN '05-01-2005' AND '05-30-2005'` The scripts that were originally used to create the existing table and indexes that are used in the query are shown in the following code segment. `create table srvideo.videotitle (videoid int IDENTITY(1,1) primary key nonclustered videotitle nvarchar(100) not null , description nvarchar(255) null , videolanguage nvarchar(50) null , releasedate datetime null , isbn nvarchar(25) , upc_no nvarchar(25) , format nvarchar(25) , cost money , retailprice money) go create clustered index cl_videotitle on srvideo.videotitle (videotitle);` You must not diminish the performance on other SELECT queries that are regularly performed. What should you do?

- A. Create a nonclustered index on the retailprice column. Add the releasedate and videotitle columns as included columns.

- B. Add a clustered index on the releasedate column.
- C. Create a nonclustered index on the releasedate column. Add the videotitle, upc_no, and retailprice columns as included columns.
- D. Create a nonclustered index on the releasedate column.

Answer: C

Topic 9, Consolidated Messenger, Scenario

Company Overview

Consolidated Messenger coordinates package deliveries throughout the United States. The company partners with multiple regional delivery companies to distribute packages of all sizes to both business and residential addresses.

The company is located in Chicago. Its regional delivery partners are located throughout the United States. The company partners with multiple regional delivery companies to distribute packages of all sizes to both business and residential addresses.

The company is located in Chicago. Its regional delivery partners are located throughout the United States.

Planned Changes

Specifications are being written for a new application to manage employee benefits for Consolidated Messenger. This application will use the users' Active Directory credentials to authenticate the users to SQL Server. Some of the benefits data is sensitive and should be viewable only from the benefits management application. However, users are allowed to view other, less sensitive benefits data when they use Microsoft Access to issue ad hoc queries against the benefits data.

In order to reduce expenses, the Promotions database and the Partners database will be consolidated onto a single SQL Server computer. Both of these databases are accessed by employees of the regional delivery companies by using SQL Server-authenticated logins. All users who have access to the Promotions database can access the Partners database, but not all users of the Partners database are allowed to access the Promotions database. This SQL Server computer should have the fewest number of instances possible while still meeting these requirements.

Problem Statements

Users report that browser response time is slow in the Shipment Tracking application, which uses the Tracking database. The Shipment Tracking application uses a large number of global temporary tables. Application diagnostics show that the delays are caused by performance issues in the database server named Certkiller 1. Results of running the performance MMC snap-in (PerfMon) reveal high values for following counters in the tempdb database on Certkiller 1:

- . Log Flush Waits/sec
- . Log Growths

The main tables in the Orders database on a server named Certkiller 5 frequently experience heavy data modification and heavy report generation concurrently, leading to performance problems for the reports due to excessive blocking.

EXISTING DATA ENVIRONMENT

Database Servers

The SQL Server computers,all of which are running SQL Server 2005 , are shown in the following table

Server	Operating system	Database (size)
CertKiller1	Windows Server 2003	Tracking (500 GB)
CertKiller2	Windows Server 2003	Promotions (30 GB)
CertKiller3	Windows 2000 Advanced Server	Partners (50 GB)
CertKiller4	Windows Server 2003	ExtraNet (100 GB)
CertKiller5	Windows Server 2003	Orders (150 GB)
CertKiller6	Windows Server 2003	CRM (250 GB)
CertKiller7	Windows Server 2003	ERP (100 GB)
CertKiller8	Windows Server 2003	Reporting Services (SSRS) databases

Databases

The Orders application connects to Certkiller 5 by using a single SQL Server-authenticated login named OrdersApp

The Orders database uses data encryption, event notification,DDL triggers, CLR stored procedures, and snapshot isolation. The database master key for the Orders database is encrypted using the service master key for Certkiller 5.

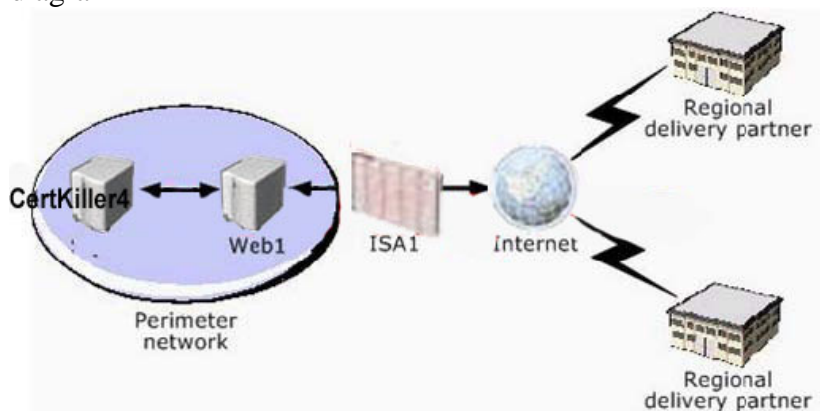
The size of tempdb on Certkiller 1 is 50 MB when the server starts, but it typically increases to approximately 1.5 GB ,growing 50 MB at a time. This database currently has a single data file.

The CRM database currently holds all historical customer data from the seven most recent completed fiscal years plus the current year to date.

EXISTING INFRASTRUCTURE

Network Infrastructure

Consolidated Messenger's WAN is configured to allow browser-based extranet access for its regional delivery partners The network is configured as shown is the following diagram



Server Infrastructure

As shown in the following table, the listed protocols are enabled for inbound connections to the servers in the perimeter network.

Server Name	Protocols
ISA1	HTTP (TCP port 80)
	HTTPS (TCP port 443)
	SQL Server (TCP port 1433)
Web1	HTTP (TCP port 80)
	HTTPS (TCP port 443)
	SMB (TCP ports 139 and 445)
CertKiller4	SMB (TCP ports 139 and 445)
	SQL Server (TCP port 1433)

BUSINESS REQUIREMENTS

General Requirements

Applications that are run by the regional delivery partners must be able to access and update data that is held in the Tracking database.

For research purposes, customer information must be kept in the CRM database for two years. For auditing purposes, the company is required to retain monthly copies of CRM data for at least five years, This auditing requirement is the only reason older data must be retained, because data older than two years will most likely never be needed.

However, if the older data is ever needed, it must be made available, in its entirety, in a database other than CRM so that it can be examined separately from the current data.

Availability

Certkiller 6 has storage area network (SAN) storage ,and Certkiller 6 supports CRM, which is a critical application that must be available with minimal downtime

. Certkiller 7 supports the ERP application ,and also needs to be available with minimal downtime.

The following availability requirements have been identified for Certkiller 6 and Certkiller 7.

- . Any failover from one SQL Server computer to another should happen automatically.
- . Each of the servers must be available at an IP address that is the same before and after a failover event.
- . The failure of Certkiller 6 or the failure of Certkiller 7 should not cause performance degradation for the other server.
- . Special data copy operations or other special processing should not be required prior to the initiation of the failover
- . SQL Server Agent jobs must resume running ,with no human intervention, after a failover event.

The reports that run against the Orders data must be able to access information that is no more than five minutes out of date, and the reports must display committed data only.

Some of these reports take 15 to 30 minutes to run.

Recoverability

A process must be designed to restore a copy of the Orders database to another SQL Server instance at the ned of each month. This copy of the Orders database will be used to run end-of-month accounting reports.

To simplify recovery operations, no more than five restore operations must be required in the event of any type of data loss in the CRM database.

TECHNICAL REQUIREMENTS

Security

The company's written security policy states that credit card information that is stored in the Orders database should be viewable only within the Orders application.

In the ExtraNet and Partners databases, individual users must log in to SQL Server by using SQL Server-authenticated logins. Password expiration must be enforced on all accounts that can access databases.

The company's written security policy states that incoming connections to the perimeter network, and all connections from the regional delivery companies, are allowed over HTTP and HTTPS, but not over any other protocols.

Performance

For performance reasons, the regional delivery companies's applications must be able to retrieve and update data by using a local copy of the Tracking database, which synchronizes back to the central Tracking database.

Interoperability

Some values in the Tracking database must be populated by reading the Windows registry on a Microsoft Windows Server 2003 application server named AppServer1, which is located in Chicago. These values must be populated once per hour in order to keep shipment tracking information up-to-date.

Topic 9, Consolidated Messenger, (7 Questions)

QUESTION 86

You need to implement a high-availability solution for Certkiller 6 and Certkiller 7, fulfilling the availability requirements at the minimum expense. What should you do?

- A. Use log shipping.
- B. Use database mirroring.
- C. Use a three-node failover cluster.
- D. Use a four-node failover cluster.

Answer: C

QUESTION 87

You need to design a method for improving performance for the reports that are run against the Orders database. What should you do?

- A. Run the reporting queries by using the NOLOCK query hint.
- B. Run the reporting queries by using the SERIALIZABLE transaction isolation level.
- C. Use log shipping to copy the Orders data to a different SQL Server computer, and ensure that the reporting queries are run against the copied data.
- D. Set up continuous replication to copy the reporting data to a different SQL Server computer, and ensure that the reporting queries are run against the copied data.

Answer: D

QUESTION 88

You need to design the consolidation strategy for the Promotions and Partners databases. You want to choose a strategy that results in the best database performance while maintaining the permissions of end users in each database. What consolidation strategy should you choose?

- A. Place each database in a separate instance running on Certkiller 1.
- B. Place each database in a separate instance running on Certkiller 2.
- C. Place both databases in a single instance running on Certkiller 1.
- D. Place both databases in a single instance running on Certkiller 3.

Answer: C

QUESTION 89

You need to design the data archiving solution for the CRM database. You want to ensure that the solution requires the minimum amount of administrative effort to implement and that it fulfills the research and auditing requirements. Which action should you specify to occur at the end of each month?

- A. Reorganize the CRM database so that the older data and the newer data are kept on different table partitions.
- B. Export the CRM data to a Microsoft Excel spreadsheet and keep each spreadsheet for five years. After creating each spreadsheet, delete the older data from the CRM database.
- C. Use SQL Server Reporting Services (SSRS) to print a copy of the older CRM data, and keep each report for five years. After printing each report, delete the older data from the CRM database.
- D. Create a full backup of the CRM database and keep each backup for five years. After creating each backup, delete the older data from the CRM database.

Answer: D

QUESTION 90

You need to modify the recovery plan for the CRM database to fulfill the company's business requirements. What should you do?

- A. Add differential backups every three hours.
- B. Change the full backups to run every night.
- C. Change the log backups to run twice per hour.
- D. Change the log backups to run once every two hours.
- E. Replace the nightly differential backups with full backups.

Answer: A

QUESTION 91

You are reviewing the backup plan for the SQL Server instance on Certkiller 5. The plan was written before the release of SQL Server 2005. You discover that the plan includes only database backups and log backups. You need to ensure that the functionality of the databases on Certkiller 5 is fully protected by backups. Which two backups should you add to the plan? (Each correct answer presents part of the solution. Choose two.)

- A. backups for the database master keys
- B. backups of the event notification definitions
- C. backups for the service master key for Certkiller 5
- D. backups of the registry keys for the SQL Server instance

Answer: A,C

QUESTION 92

You need to ensure that the regional delivery companies can access the tracking data. What should you do?

- A. Use Remote Desktop to connect client computers at the delivery companies to the network in the Chicago office.
- B. Use an HTTP endpoint and SOAP to enable stored procedures that can view and update the central tracking data.
- C. Publish the tracking data to the delivery companies by using merge replication with Web synchronization.
- D. Publish the tracking data to the delivery companies by using transactional replication with immediate updating subscribers.

Answer: C