



**Microsoft**

## **Exam Questions 70-764**

Administering a SQL Database Infrastructure (beta)

### NEW QUESTION 1

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have an on-premises server that runs Microsoft SQL Server 2016 Standard Edition. You need to identify missing indexes.

What should you use?

- A. Activity Monitor
- B. Sp\_who3
- C. SQL Server Management Studio (SSMS) Object Explorer
- D. SQL Server Data Collector
- E. SQL Server Data Tools (SSDT)
- F. SQL Server Configuration Manager

**Answer:** D

#### **Explanation:**

Data Collector can gather performance information from multiple SQL Server instances and store it in a single repository. It has three built-in data collecting specifications (data collectors) designed to collect the most important performance metrics. The information collected by default is about disk usage, query statistics, and server activity.

The Query Statistics data collection set collects information about query statistics, activity, execution plans and text on the SQL Server instance.

Missing indexes can be found with the execution plans.

References: <https://www.sqlshack.com/sql-server-performance-monitoring-data-collector/>

### NEW QUESTION 2

- (Exam Topic 1)

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You are a database administrator for a company that has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases, and each customer uses a dedicated instance. The environments that you manage are shown in the following table.

Customer	Cloud Type	Description
AdventureWorks Cycles	Private	The environment includes a database named <b>Adventureworks</b> that contains a single schema named ADVSchema. You must implement auditing for all objects in the ADVSchema schema. You must also implement auditing to record access to data that is considered sensitive by the company.
Tailspin Toys	Private	Tailspin Toys has a custom application that accesses a hosted database named <b>TSpinDB</b> . The application will monitor <b>TSpinDB</b> and capture information over time about which database objects are accessed and how frequently they are accessed.
Contoso, Ltd.	Private	The environment has a database named <b>ConDB</b> that was recently upgraded to Microsoft SQL Server 2016. Contoso reports that <b>ConDB</b> is slow to return results when the server is busy. You must modify the startup parameters to <b>ConDB</b> to optimize performance.
Wingtip Toys	Private	Wingtip Toys has a database named <b>WingDB</b> . All tables in the database have indexes. Users report system response time is slow during peak activity periods. You observe that the performance issues are related to locking.  Wingtip Toys receives data updates from suppliers each week. You must implement a process for importing the data into <b>WingDB</b> . You must use minimal logging and minimized data loss during import process.
Wide World Importers	Public	The environment includes a database named <b>WDWDB</b> . Neither auditing nor statistics are configured for <b>WDWDB</b> . You must log any deletion of views and all database record update operations.

You need to configure the Contoso instance.

How should you complete the Transact-SQL statement? To answer, select the appropriate Transact-SQL segments in the answer area.

## Answer Area

```

sp_configure [max worker threads] , 1
GO
RECONFIGURE WITH OVERRIDE
GO
sp_configure [max worker threads] , 0
GO
RECONFIGURE
GO

```

- A. Mastered
- B. Not Mastered

**Answer:** A

### Explanation:

Box 1: show advanced options

Advanced configuration options are displayed by first setting show advanced option to 1. Box 2: max worker threads

SQL Server uses the native thread services of the operating systems so that one or more threads support each network that SQL Server supports simultaneously, another thread handles database checkpoints, and a pool of threads handles all users. The default value for max worker threads is 0. This enables SQL Server to automatically configure the number of worker threads at startup. The default setting is best for most systems.

References:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-the-max-worker-threads-ser>

### NEW QUESTION 3

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database that includes a table named Application.Events. Application.Events contains millions of records about user activity in an application.

Records in Application.Events that are more than 90 days old are purged nightly.

When records are purged, table locks are causing contention with inserts.

You need to be able to modify Application.Events without requiring any changes to the applications that utilize Application.Events.

Which type of solution should you use?

- A. Partitioned tables
- B. Online index rebuild
- C. Change data capture
- D. Change tracking

**Answer:** A

### NEW QUESTION 4

- (Exam Topic 1)

You administer a Windows Azure SQL Database database named Human\_Resources. The database contains 2 tables named Employees and SalaryDetails. You add two Windows groups as logins for the server:

CORP\Employees - All company employees

CORP\HRAdmins - HR administrators only

HR Administrators are also company employees.

You need to grant users access according to the following requirements:

CORP\Employees should have SELECT access to the Employees table.

Only users in CORP\HRAdmins should have SELECT access to the SalaryDetails table.

Logins are based only on Windows security groups.

What should you do?

- A. Create a database role called Employees. Add CORP\Employees to the db\_datareader role. Add all company employees except HR administrators to the Employees role. Deny SELECT access to the SalaryDetails table to the Employees role.
- B. Create a database role called HRAdmins. Add all company employees except HR administrators to the db\_datareader role, Add all HR administrators to the



HRAdmins role. Grant SELECT access to the SalaryDetails table to the HRAdmins role. Deny SELECT access to the SalaryDetails table to the db\_datareader role.  
C. Create two database roles: Employees and HRAdmins. Add all company employees to the Employees role. Add HR administrators to the HRAdmins role. Grant SELECT access to all tables except SalaryDetails to the Employees role. Grant SELECT access to the SalaryDetails table to the HRAdmins role. Deny SELECT access to the SalaryDetails table to the Employees role.  
D. Create a database role called Employees. Add all HR administrators to the db\_datareader role. Add all company employees to the Employees role. Grant SELECT access to all tables except the SalaryDetails table to the Employees role. Deny SELECT access to the SalaryDetails table to the Employees role.

**Answer: D**

#### NEW QUESTION 5

- (Exam Topic 1)

You administer two Microsoft SQL Server 2016 servers named ProdSrv1 and ProdSrv2. ProdSrv1 is configured as a Distributor.

Both servers are configured to use the Windows NT Service virtual accounts for all SQL Services.

You are configuring snapshot replication from ProdSrv1 to ProdSrv2 by using ProdSrv2 as a pull subscriber.

The distribution agent on ProdSrv2 regularly fails, displaying the following error message: "Cannot access the file. Operating system error code 5 (Access is denied.)."

You need to configure the distribution agent by granting only the minimum required access to all accounts. What should you do?

- A. Configure the Subscriber to use the Local System account.
- B. Configure the SQL Server Agent service to run under the Local System account
- C. Configure the Subscriber to use the SQL Server Agent service account.
- D. Configure the SQL Server Agent service to run under a Windows domain account
- E. Configure the Subscriber to use the SQL Server Agent service account
- F. Grant FULL CONTROL access for the domain account to the ReplData share on ProdSrv1.
- G. Configure the Subscriber to use a Windows domain account
- H. Grant READ access for the domain account to the ReplData share on ProdSrv1.

**Answer: D**

#### NEW QUESTION 6

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database named Orders.

Users report that during peak usage periods, certain operations are taking more time than expected. Your initial analysis suggests that blocking is the cause.

You need to gather more data to be able to determine which processes are being blocked and to identify the root cause.

What should you do?

- A. Start a trace using SQL Server Profiler to catch the Lock: Deadlock event.
- B. Use sp\_configure to set the blocked process threshold
- C. Start a trace using SQL Server Profiler to catch the Blocked Process Report event.
- D. Schedule a SQL Agent job to run every 60 seconds and insert the results of executing the sys.dm\_os\_wait\_stats DMV into a table.
- E. Use System Monitor to catch the Lock Waits/sec event.

**Answer: B**

#### NEW QUESTION 7

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to configure a Microsoft SQL Server instance to ensure that a user named Mail1 can send mail by using Database Mail.

Solution: You add the DatabaseMailUserRole to Mail1 in the msdb database. Does the solution meet the goal?

- A. Yes
- B. No

**Answer: A**

#### Explanation:

Database Mail is guarded by the database role DatabaseMailUserRole in the msdb database in order to prevent anyone from sending arbitrary emails. Database users or roles must be created in the msdb database and must also be a member of DatabaseMailUserRole in order to send emails with the exception of sysadmin who has all privileges.

Note: Database Mail was first introduced as a new feature in SQL Server 2005 and replaces the SQL Mail feature found in previous versions.

References:

[http://www.iddevelopment.info/data/SQLServer/DBA\\_tips/Database\\_Administration/DBA\\_20.shtml](http://www.iddevelopment.info/data/SQLServer/DBA_tips/Database_Administration/DBA_20.shtml)

#### NEW QUESTION 8

- (Exam Topic 1)

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After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A company has a server that runs Microsoft SQL Server 2016 Web edition. The server has a default instance that hosts a database named DB1.

You need to ensure that you can perform auditing at the database level for DB1.

Solution: You migrate DB1 to a named instance on a server that runs Microsoft SQL Server 2016 Standard edition.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer: B**

**Explanation:**

All editions of SQL Server support server level audits. All editions support database level audits beginning with SQL Server 2016 SP1. Prior to that, database level auditing was limited to Enterprise, Developer, and Evaluation editions.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/auditing/sql-server-audit-database-engine>

**NEW QUESTION 9**

- (Exam Topic 1)

You have a database named DB1 that stores more than 700 gigabyte (GB) of data and serves millions of requests per hour.

Queries on DB1 are taking longer than normal to complete. You run the following Transact-SQL statement:

```
SELECT * FROM sys.database_query_store_options
```

You determine that the Query Store is in Read-Only mode.

You need to maximize the time that the Query Store is in Read-Write mode. Which Transact-SQL statement should you run?

- A. ALTER DATABASE DB1 SET QUERY\_STORE (QUERY\_CAPTURE\_MODE = ALL)
- B. ALTER DATABASE DB1 SET QUERY\_STORE (MAX\_STORAGE\_SIZE\_MB = 50)
- C. ALTER DATABASE DB1 SET QUERY\_STORE (CLEANUP\_POLICY = (STALE\_QUERY\_THRESHOLD\_DAYS = 14));
- D. ALTER DATABASE DB1 SET QUERY\_STORE (QUERY\_CAPTURE\_MODE = NONE)

**Answer: C**

**Explanation:**

Stale Query Threshold (Days): Time-based cleanup policy that controls the retention period of persisted runtime statistics and inactive queries.

By default, Query Store is configured to keep the data for 30 days which may be unnecessarily long for your scenario.

Avoid keeping historical data that you do not plan to use. This will reduce changes to read-only status. The size of Query Store data as well as the time to detect and mitigate the issue will be more predictable. Use Management Studio or the following script to configure time-based cleanup policy:

```
ALTER DATABASE [QueryStoreDB]
```

```
SET QUERY_STORE (CLEANUP_POLICY = (STALE_QUERY_THRESHOLD_DAYS = 14));
```

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/best-practice-with-the-query-store>

**NEW QUESTION 10**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 server.

When transaction logs grow, SQL Server must send an email message to the database administrators. You need to configure SQL Server to send the email messages.

What should you configure?

- A. SQL Mail
- B. An Extended Events session
- C. Alerts and operators in SQL Server Agent
- D. Policies under Policy-Based Management

**Answer: C**

**Explanation:**

Operators are aliases for people or groups that can receive electronic notification when jobs have completed or alerts have been raised. The SQL Server Agent service supports the notification of administrators through operators. Operators enable notification and monitoring capabilities of SQL Server Agent.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/database-mail/configure-sql-server-agent-mail-to-use-d>

**NEW QUESTION 10**

- (Exam Topic 1)

You install Microsoft SQL Server 2016 on a new server.

After setup is complete, you attempt to start the SQL Server service.

After being in a starting state for a few moments, the service goes back to a stopped state. You need to determine the cause of the failure. Which file should you use?

- A. %programfiles%\Microsoft SQLServer\MSSQL11.MSSQLSERVER\MSSQL\Log\Errorlog
- B. %programfiles%\Microsoft SQL Server\110\setup\Bootstrap\Log\Summary.txt
- C. %programfiles%\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA\mastlog.idf
- D. %programfiles%\Microsoft SQLServer\110\Shared>ErrorDmpr[XXXX] .mdmp

**Answer: A**

**NEW QUESTION 12**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database instance.

You create a new user named UserA. You need to ensure that UserA is able to create SQL Server Agent jobs and to execute SQL Server Agent jobs.

To which role should you add UserA?

- A. Securityadmin
- B. RSExecRole
- C. SQLAgentUserRole
- D. DatabaseMailUserRole

**Answer: C**

## NEW QUESTION 15

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You are a database administrator for a company that has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases, and each customer uses a dedicated instance. The environments that you manage are shown in the following table.

Customer	Cloud Type	Description
AdventureWorks Cycles	Private	The environment includes a database named <b>Adventureworks</b> that contains a single schema named <b>ADVSchema</b> . You must implement auditing for all objects in the <b>ADVSchema</b> schema. You must also implement auditing to record access to data that is considered sensitive by the company.
Tailspin Toys	Private	Tailspin Toys has a custom application that accesses a hosted database named <b>TSpinDB</b> . The application will monitor <b>TSpinDB</b> and capture information over time about which database objects are accessed and how frequently they are accessed.
Contoso, Ltd.	Private	The environment has a database named <b>ConDB</b> that was recently upgraded to Microsoft SQL Server 2016. Contoso reports that <b>ConDB</b> is slow to return results when the server is busy. You must modify the startup parameters to <b>ConDB</b> to optimize performance.
Wingtip Toys	Private	Wingtip Toys has a database named <b>WingDB</b> . All tables in the database have indexes. Users report system response time is slow during peak activity periods. You observe that the performance issues are related to locking.  Wingtip Toys receives data updates from suppliers each week. You must implement a process for importing the data into <b>WingDB</b> . You must use minimal logging and minimized data loss during import process.
Wide World Importers	Public	The environment includes a database named <b>WDWDB</b> . Neither auditing nor statistics are configured for <b>WDWDB</b> . You must log any deletion of views and all database record update operations.

You need to configure monitoring for Tailspin Toys.

In the table below, identify the monitoring tool that you must use for each activity.

NOTE: Make only one selection in each column.

## Answer Area

Monitoring option	Monitoring from application	Trend analysis
Error logs	<input type="radio"/>	<input type="radio"/>
Transact-SQL	<input type="radio"/>	<input type="radio"/>
System Monitor	<input type="radio"/>	<input type="radio"/>
Distributed Replay	<input type="radio"/>	<input type="radio"/>

A. Mastered



B. Not Mastered

**Answer:** A

**Explanation:**

Monitoring from application: Transact-SQL

Transact-SQL can be used to monitor a customized application. Trend analysis: System Monitor

System Monitor can provide trend analysis. From question:

**Tailspin Toys has a custom application that accesses a hosted database named TSpinDB. The application will monitor TSpinDB and capture information over time about which database objects are accessed and how frequently they are accessed.**

Tailspin Toys has a custom application that accesses a hosted database named TSpinDB. The application will monitor TSpinDB and capture information over time about which database objects are accessed and how frequently they are accessed.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/performance-monitoring-and-tuning-tools>

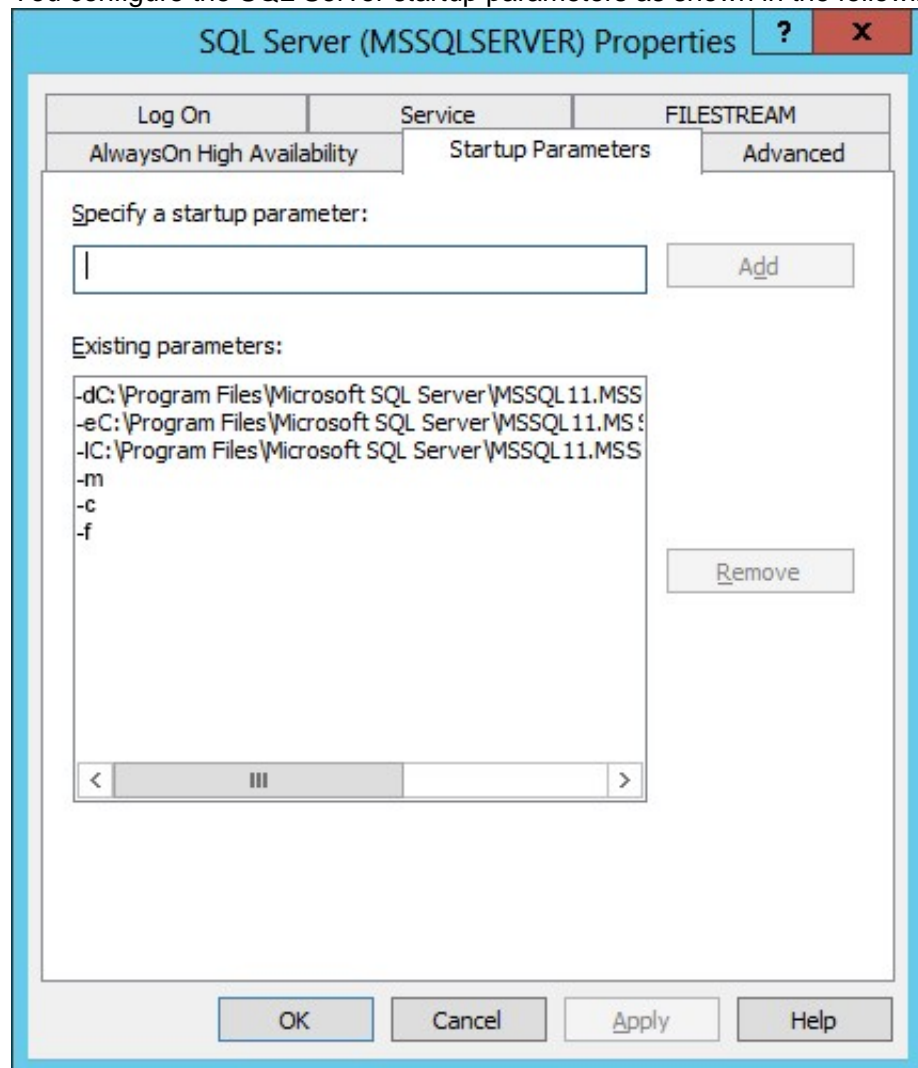
**NEW QUESTION 20**

- (Exam Topic 1)

You manage a Microsoft SQL Server environment. A server fails and writes the following event to the application event log:

MSG\_AUDIT\_FORCED\_SHUTDOWN

You configure the SQL Server startup parameters as shown in the following graphic:



Use the drop-down menus to select the answer choice that answers each question. NOTE: Each correct selection is worth one point.



## Answer Area

In which user mode will the SQL Server instance start?

	▼
single-user	
multi-user	
restricted-user	

With which server role can a local Windows administrator connect to the database?

	▼
public	
serveradmin	
sysadmin	
setupadmin	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: single-user

The startup option -m starts an instance of SQL Server in single-user mode. Box 2: sysadmin

Starting SQL Server in single-user mode enables any member of the computer's local Administrators group to connect to the instance of SQL Server as a member of the sysadmin fixed server role.

References:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/database-engine-service-startup-option>

### NEW QUESTION 24

- (Exam Topic 1)

You administer a Windows Azure SQL Database database named Inventory that contains a stored procedure named p\_AddInventory.

Users need to be able to SELECT from all tables in the database and execute the stored procedure. You need to grant only the necessary permissions.

What should you do?

- A. Grant EXECUTE permission on p\_AddInventory to all user
- B. Grant VIEW DEFINITION to all users.
- C. Grant EXECUTE permission on p\_AddInventory to all user
- D. Add all users to the db\_datawriter role.
- E. Add all users to the db\_owner role.
- F. Grant EXECUTE permission on p\_AddInventory to all user
- G. Add all users to the db\_datareader role.

**Answer:** D

### NEW QUESTION 25

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database named Contoso on a server named Server01.

You need to track all SELECT statements issued in the Contoso database only by users in a role named Sales. What should you create?

- A. An Alert
- B. A Resource Pool
- C. An Extended Event session
- D. A Server Audit Specification
- E. A SQL Profiler Trace
- F. A Database Audit Specification
- G. A Policy
- H. A Data Collector Set

**Answer:** F

### NEW QUESTION 29

- (Exam Topic 1)

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A company has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases.

One customer reports that their database is not responding as quickly as the service level agreements dictate. You observe that the database is fragmented.

You need to optimize query performance. Solution: You rebuild all indexes.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** A

**Explanation:**

You can remedy index fragmentation by either reorganizing an index or by rebuilding an index. References: [https://msdn.microsoft.com/en-us/library/ms189858\(v=sql.105\).aspx](https://msdn.microsoft.com/en-us/library/ms189858(v=sql.105).aspx)

**NEW QUESTION 34**

- (Exam Topic 1)

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You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database environments.

You have a user database named HRDB that contains sensitive human resources data. The HRDB backup files must be encrypted.

You need to grant the correct permission to the service account that backs up the HRDB database. Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View Server State
- G. View Definition
- H. sysadmin

**Answer:** G

**Explanation:**

Restoring the encrypted backup: SQL Server restore does not require any encryption parameters to be specified during restores. It does require that the certificate or the asymmetric key used to encrypt the backup file be available on the instance that you are restoring to. The user account performing the restore must have VIEW DEFINITION permissions on the certificate or key.

References: <https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/backup-encryption>

**NEW QUESTION 37**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 instance that has multiple databases. You have a two-node SQL Server failover cluster.

The cluster uses a storage area network (SAN). You discover I/O issues. The SAN is at capacity and additional disks cannot be added.

You need to reduce the I/O workload on the SAN at a minimal cost. What should you do?

- A. Move user databases to a local disk.
- B. Expand the tempdb data and log files.
- C. Modify application code to use table variables.
- D. Move the tempdb files to a local disk.

**Answer:** D

**Explanation:**

You can configure TempDB on a local disk when you, for example, installing your SQL Server cluster. References:

<https://www.mssqltips.com/sqlservertip/2817/sql-server-2012-cluster-with-tempdb-on-local-disk/>

**NEW QUESTION 39**

- (Exam Topic 1)

You have a database. The existing backups for the database and their corresponding files are listed in the following table.

Backup type	Backup date/time	File name
Full	05/02/2016 21:00	Full_20160502_2100.bak
Transaction log	05/03/2016 6:00	Log_20160503_0600.trn
Transaction log	05/03/2016 9:00	Log_20160503_0900.trn
Differential	05/03/2016 12:00	Diff_20160503_1200.bak
Transaction log	05/03/2016 15:00	Log_20160503_1500.trn
Differential	05/03/2016 17:00	Diff_20160503_1700.bak
Transaction log	05/03/2016 19:00	Log_20160503_1900.trn

You purchase a new server. You must restore the database to the new server. You need to restore the data to the most recent time possible.

Which three files should you restore in sequence? To answer, move the appropriate files from the list of files to the answer area and arrange them in the correct order.

## Files

Log\_20160503\_0600.trn

Log\_20160503\_1500.trn

Full\_20160502\_2100.bak

Log\_20160503\_1900.trn

Log\_20160503\_0900.trn

Diff\_20160503\_1200.bak

Diff\_20160503\_1700.bak

## Answer Area



- A. Mastered
- B. Not Mastered

**Answer:** A

### Explanation:

Step 1: Full.

Start with the full backup.

Step 2: Diff\_20160503\_1700.bak

Followed by the most recent differential backup. Step 3: Log\_20160503\_1900.bak

And finally the most recent log backup (the only log backup done after the most recent differential backup).

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/differential-backups-sql-server>

### NEW QUESTION 41

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database named Contoso on a server named Server01. You need to collect data for a long period of time to troubleshoot wait statistics when querying Contoso. You also need to ensure minimum impact to the server. What should you create?

- A. An Alert
- B. A Resource Pool
- C. An Extended Event session
- D. A Server Audit Specification
- E. A SQL Profiler Trace
- F. A Database Audit Specification
- G. A Policy

**Answer:** C

### NEW QUESTION 42

- (Exam Topic 1)

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A company has a server that runs Microsoft SQL Server 2016 Web edition. The server has a default instance that hosts a database named DB1.

You need to ensure that you can perform auditing at the database level for DB1.

Solution: You migrate DB1 to the default instance on a server that runs Microsoft SQL Server 2016 Standard edition.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

### Explanation:

All editions of SQL Server support server level audits. All editions support database level audits beginning with SQL Server 2016 SP1. Prior to that, database level auditing was limited to Enterprise, Developer, and Evaluation editions.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/auditing/sql-server-audit-database-engine>



#### NEW QUESTION 46

- (Exam Topic 1)

You administer all the deployments of Microsoft SQL Server 2016 in your company.

You need to ensure that an OLTP database that includes up-to-the-minute reporting requirements can be off-loaded from the primary database to another server.

You also need to be able to add indexes to the secondary database. Which configuration should you use?

- A. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
- B. Two servers configured in the same data center SQL Server Availability Group configured in Asynchronous-Commit Availability Mode One server configured as an Active Secondary
- C. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby
- D. Two servers configured in different data centers SQL Server Availability Group configured in Asynchronous-Commit Availability Mode
- E. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
- F. SQL Server that includes an application database configured to perform transactional replication
- G. SQL Server that includes an application database configured to perform snapshot replication
- H. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance

**Answer:** F

#### Explanation:

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/replication/transactional/transactional-replication>

#### NEW QUESTION 50

- (Exam Topic 1)

You have a database named DB1 that is configured to use the full recovery model. You have a full daily backup job that runs at 02:00. The job backs up data from DB1 to the file B:\DB1.bak.

You need to restore the DB1 database to the point in time of May 25, 2016 at 02:23 and ensure that the database is functional and starts to accept connections.

Which Transact-SQL statement should you run?

- A.
- ```
BACKUP LOG [DB1] TO DISK = N'B:\DB1Log.bak' WITH RECOVERY
RESTORE DATABASE [DB1] FROM DISK = N'B:\DB1.bak' WITH NORECOVERY
RESTORE LOG [DB1] FROM DISK = N'B:\DB1Log.bak' WITH STOPAT = N'2016-05-25T02:23:00'
```
- B.
- ```
BACKUP LOG [DB1] TO DISK = N'B:\DB1Log.bak' WITH NORECOVERY
RESTORE DATABASE [DB1] FROM DISK = N'B:\DB1.bak' WITH NORECOVERY
RESTORE LOG [DB1] FROM DISK = N'B:\DB1Log.bak' WITH STOPAT = N'2016-05-25T02:23:00'
```
- C.
- ```
BACKUP LOG [DB1] TO DISK = N'B:\DB1Log.bak' WITH NORECOVERY
RESTORE DATABASE [DB1] FROM DISK = N'B:\DB1.bak' WITH NORECOVERY
RESTORE LOG [DB1] FROM DISK = N'B:\DB1Log.bak' WITH STOPAT = N'2016-05-25T02:23:00', NORECOVERY
```
- D.
- ```
RESTORE DATABASE [DB1] FROM DISK = N'B:\DB1.bak' WITH STOPAT = N'2016-05-25T02:23:00', RECOVERY
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Answer:** B

#### NEW QUESTION 51

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to configure a Microsoft SQL Server instance to ensure that a user named Mail1 can send mail by using Database Mail.

Solution: You add the DatabaseMailUserRole to Mail1 in the tempdb database. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

#### Explanation:

Database Mail is guarded by the database role DatabaseMailUserRole in the msdb database, not the tempdb database, in order to prevent anyone from sending arbitrary emails. Database users or roles must be created in the msdb database and must also be a member of DatabaseMailUserRole in order to send emails with the exception of sysadmin who has all privileges.

Note: Database Mail was first introduced as a new feature in SQLServer 2005 and replaces the SQL Mail feature found in previous versions.

References:



[http://www.idevelopment.info/data/SQLServer/DBA\\_tips/Database\\_Administration/DBA\\_20.shtml](http://www.idevelopment.info/data/SQLServer/DBA_tips/Database_Administration/DBA_20.shtml)

#### NEW QUESTION 55

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 environment.

One of the SQL Server 2016 instances contains a database named Sales. You plan to migrate Sales to Windows Azure SQL Database.

To do so, you need to implement a contained database.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Set database containment to AZURE.
- B. Enable server property contained database authentication.
- C. Disable server property cross db ownership chaining.
- D. Set database containment to PARTIAL.
- E. Disable server property contained database authentication.
- F. Set database containment to FULL.

Answer: BD

#### NEW QUESTION 59

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You are a database administrator for a company that has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases, and each customer uses a dedicated instance. The environments that you manage are shown in the following table.

Customer	Cloud Type	Description
AdventureWorks Cycles	Private	The environment includes a database named <b>Adventureworks</b> that contains a single schema named <b>ADVSchema</b> . You must implement auditing for all objects in the <b>ADVSchema</b> schema. You must also implement auditing to record access to data that is considered sensitive by the company.
Tailspin Toys	Private	Tailspin Toys has a custom application that accesses a hosted database named <b>TSpinDB</b> . The application will monitor <b>TSpinDB</b> and capture information over time about which database objects are accessed and how frequently they are accessed.
Contoso, Ltd.	Private	The environment has a database named <b>ConDB</b> that was recently upgraded to Microsoft SQL Server 2016. Contoso reports that <b>ConDB</b> is slow to return results when the server is busy. You must modify the startup parameters to <b>ConDB</b> to optimize performance.
Wingtip Toys	Private	Wingtip Toys has a database named <b>WingDB</b> . All tables in the database have indexes. Users report system response time is slow during peak activity periods. You observe that the performance issues are related to locking.  Wingtip Toys receives data updates from suppliers each week. You must implement a process for importing the data into <b>WingDB</b> . You must use minimal logging and minimized data loss during import process.
Wide World Importers	Public	The environment includes a database named <b>WDWDB</b> . Neither auditing nor statistics are configured for <b>WDWDB</b> . You must log any deletion of views and all database record update operations.

You need to configure auditing for WDWDB.

In the table below, identify the event type that you must audit for each activity.

Answer Area

Event type	View deletions	Update operations
Data changes	<input type="radio"/>	<input type="radio"/>
Schema changes	<input type="radio"/>	<input type="radio"/>
SQL batch	<input type="radio"/>	<input type="radio"/>
Data access	<input type="radio"/>	<input type="radio"/>

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

Event type	View deletions	Update operations
Data changes	<input type="radio"/>	<input checked="" type="radio"/>
Schema changes	<input checked="" type="radio"/>	<input type="radio"/>
SQL batch	<input type="radio"/>	<input type="radio"/>
Data access	<input type="radio"/>	<input type="radio"/>

NEW QUESTION 61

- (Exam Topic 1)

You administer all the deployments of Microsoft SQL Server 2016 in your company. A database contains a large product catalog that is updated periodically. You need to be able to send the entire product catalog to all branch offices on a monthly basis. Which configuration should you use?

- A. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby
- B. SQL Server that includes an application database configured to perform transactional replication
- C. Two servers configured in the same data center SQL Server Availability Group configured in AsynchronousCommit Availability Mode One server configured as an Active Secondary
- D. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance
- E. SQL Server that includes an application database configured to perform snapshot replication
- F. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
- G. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
- H. Two servers configured in different data centers SQL Server Availability Group configured in AsynchronousCommit Availability Mode

Answer: E

Explanation:

Snapshot replication distributes data exactly as it appears at a specific moment in time and does not monitor for updates to the data. When synchronization occurs, the entire snapshot is generated and sent to Subscribers.

Using snapshot replication by itself is most appropriate when one or more of the following is true:

- Data changes infrequently.
- It is acceptable to have copies of data that are out of date with respect to the Publisher for a period of time.
- Replicating small volumes of data.
- A large volume of changes occurs over a short period of time.

References: <https://docs.microsoft.com/en-us/sql/relational-databases/replication/snapshot-replication>

NEW QUESTION 64

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database

environments.

Clients connect to databases by using line-of-business applications. Developers connect by using SQL Server Management Studio (SSMS).

You need to provide permissions to a service account that will be used to provision a new database for a client. Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View Server State
- G. View Definition
- H. sysadmin

**Answer:** C

**Explanation:**

Members of the dbcreator fixed server role can create, alter, drop, and restore any database.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/authentication-access/server-level-roles>

**NEW QUESTION 67**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database instance.

You plan to migrate the database to Windows Azure SQL Database.

You verify that all objects contained in the database are compatible with Windows Azure SQL Database. You need to ensure that database users and required server logins are migrated to Windows Azure SQL Database.

What should you do?

- A. Use the Copy Database wizard.
- B. Back up the database from the local server and restore it to Windows Azure SQL Database.
- C. Use the Database Transfer wizard.
- D. Use SQL Server Management Studio to deploy the database to Windows Azure SQL Database.

**Answer:** D

**NEW QUESTION 69**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database that includes a table named dbo.Log. This table contains millions of records about user activity in an application.

Records in dbo.Log that are more than 90 days old are purged nightly. When records are purged, table locks are causing contention within inserts.

You need to be able to modify dbo.Log without requiring any changes to the applications that utilize dbo.Log. Which type of solution should you use?

- A. Extended events
- B. Columnstore index
- C. Partitioned tables
- D. Read committed snapshot

**Answer:** C

**NEW QUESTION 71**

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database named DB1 that is 640 GB and is updated frequently.

You enabled log shipping for DB1 and configure backup and restore to occur every 30 minutes. You discover that the disks on the data server are almost full.

You need to reduce the amount of disk space used by the log shipping process.

Solution: You increase the frequency of the transaction log backups to every 10 minutes. Does this meet the goal?

- A. Yes
- B. No

**Answer:** B

**NEW QUESTION 72**

- (Exam Topic 1)

You are planning to deploy log shipping for Microsoft SQL Server and store all backups on a dedicated fileshare.

You need to configure the servers to perform each log shipping step.

Which server instance should you configure to perform each action? To answer, select the appropriate server instances in the dialog box in the answer area.



# Answer Area

Action	Server instance
Complete the backup job.	<div>▼</div> <div>Primary server instance</div> <div>Secondary server instance</div> <div>Monitor server instance</div> <div>Backup share file server</div>
Copy the backup job.	<div>▼</div> <div>Primary server instance</div> <div>Secondary server instance</div> <div>Monitor server instance</div> <div>Backup share file server</div>
Restore the backup.	<div>▼</div> <div>Primary server instance</div> <div>Secondary server instance</div> <div>Monitor server instance</div> <div>Backup share file server</div>

- A. Mastered
- B. Not Mastered

Answer: A

**Explanation:**

Note: Before you configure log shipping, you must create a share to make the transaction log backups available to the secondary server.

SQL Server Log shipping allows you to automatically send transaction log backups from a primary database on a primary server instance to one or more secondary databases on separate secondary server instances. The transaction log backups are applied to each of the secondary databases individually. An optional third server instance, known as the monitor server, records the history and status of backup and restore operations and, optionally, raises alerts if these operations fail to occur as scheduled.

Box 1: Primary server instance.

The primary server instance runs the backup job to back up the transaction log on the primary database. backup job: A SQL Server Agent job that performs the backup operation, logs history to the local server and the monitor server, and deletes old backup files and history information. When log shipping is enabled, the job category "Log Shipping Backup" is created on the primary server instance.

Box 2: Secondary server instance

Each of the three secondary server instances runs its own copy job to copy the primary log-backup file to its own local destination folder.

copy job: A SQL Server Agent job that copies the backup files from the primary server to a configurable destination on the secondary server and logs history on the secondary server and the monitor server. When log shipping is enabled on a database, the job category "Log Shipping Copy" is created on each secondary server in a log shipping configuration.

Box 3: Secondary server instance.

Each secondary server instance runs its own restore job to restore the log backup from the local destination folder onto the local secondary database.

restore job: A SQL Server Agent job that restores the copied backup files to the secondary databases. It logs history on the local server and the monitor server, and deletes old files and old history information. When log shipping is enabled on a database, the job category "Log Shipping Restore" is created on the secondary server instance.

References: <https://docs.microsoft.com/en-us/sql/database-engine/log-shipping/about-log-shipping-sql-server>

**NEW QUESTION 74**  
 - (Exam Topic 1)

You have a test server that contains a database named DB1. Backups of the database are written to a single backup device. The backup device has a full, differential, and transaction log backup.

You discover that the database is damaged. You restore the database to the point at which the differential backup was taken.

You need to rebuild the database with data stored in the latest transaction logs.

How should you complete the Transact-SQL statement? To answer, drag the appropriate Transact-SQL segments to the correct locations. Each Transact-SQL segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.



## Transact-SQL statements

NORECOVERY
RECOVERY
LOG
DBCC CHECKDB
CONTINUE_AFTER_ERROR
RESTORE
RESTORE VERIFYONLY

● ● ● ●

## Answer Area

Transact-SQL segment DB1 FROM DISK = N'Z:\Backups\Backup.bak WITH  
Transact-SQL segment

- A. Mastered
- B. Not Mastered

**Answer:** A

### Explanation:

Box 1: RESTORE

Box 2: RECOVERY

The RESTORE ... WITH RECOVERY option puts the database into a useable state, so users can access a restored database.

References:

<https://www.mssqltips.com/sqlservertutorial/112/recovering-a-database-that-is-in-the-restoring-state/>

### NEW QUESTION 78

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 server that has SQL Server Integration Services (SSIS) installed. You plan to deploy new SSIS packages to the server.

The SSIS packages use the Project Deployment Model together with parameters and Integration Services environment variables.

You need to configure the SQL Server environment to support these packages. What should you do?

- A. Create SSIS configuration files for the packages.
- B. Create an Integration Services catalog.
- C. Install Data Quality Services.
- D. Install Master Data services.

**Answer:** B

### Explanation:

Use can use Project Deployment Model for a project, containing packages and parameters, which is deployed to the SSISDB catalog on an instance of SQL Server.

References:

<https://docs.microsoft.com/en-us/sql/integration-services/packages/deploy-integration-services-ssis-projects-and>

### NEW QUESTION 80

- (Exam Topic 1)

You administer a SQL Server 2016 database instance.

You need to configure the SQL Server Database Engine service on a failover cluster. Which user account should you use?

- A. A domain user
- B. The BUILTIN\SYSTEM account
- C. A local user with Run as Service permissions
- D. The SQLBrowser account

**Answer:** A

### Explanation:

Account of the person who installs the cluster: The person who installs the cluster must use an account with the following characteristics:

The account must be a domain account. It does not have to be a domain administrator account. It can be a domain user account if it meets the other requirements in this list.

Etc. References:

<https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2008-R2-and-2008/cc73100>

#### NEW QUESTION 81

- (Exam Topic 1)

You administer a Microsoft SQL Server database named Contoso. You create a stored procedure named Sales.ReviewInvoice by running the following Transact-SQL statement:

```
CREATE PROCEDURE Sales.ReviewInvoice (@SaleID int)
AS
    DECLARE @tsql nvarchar(4000) = 'SELECT SaleID, CustomerID, TotalAmount FROM Sales.SalesInvoice WHERE SaleID = '
    SET @tsql = @tsql + CAST(@saleID AS varchar(20))
    EXEC sp_executesql @tsql
```

You need to create a Windows-authenticated login named ContosoSearch and ensure that ContosoSearch can run the Sales.ReviewInvoices stored procedure. Which three Transact-SQL segments should you use to develop the solution? To answer, move the appropriate Transact-SQL segments from the list of Transact-SQL segments to the answer area and arrange them in the correct order.

### Transact-SQL segments

```
Use Contoso
GO
CREATE USER Contoso\SalesGroup FOR
LOGIN
Contoso\SalesGroup
```

```
ALTER ROLE db_ddladmin ADD MEMBER
Contoso\SalesGroup
GRANT VIEW DEFINITION ON Sales.-
SalesInvoice TO
Contoso\SalesGroup
```

```
use master
CREATE LOGIN Contoso\SalesGroup FROM
WINDOWS
GO
```

```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT SELECT ON Sales.SalesInvoice TO
Contoso\SalesGroup
```

```
use master
CREATE LOGIN Contoso\ContosoSearch WITH
PASSWORD=N'Pa$$w0rd'
GO
```

```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT VIEW DEFINITION ON Sales.SalesInvoice TO
Contoso\SalesGroup
```

```
GRANT EXECUTE, SELECT ON Sales.ReviewInvoice TO
Contoso\SalesGroup
```

### Answer Area





- A. Mastered  
 B. Not Mastered

Answer: A

Explanation:

Transact-SQL segments	Answer Area
<pre>Use Contoso GO CREATE USER Contoso\SalesGroup FOR LOGIN Contoso\SalesGroup</pre>	<pre>use master CREATE LOGIN Contoso\ContosoSearch WITH PASSWORD=N'Pa\$\$w0rd' GO</pre>
<pre>ALTER ROLE db_ddladmin ADD MEMBER Contoso\SalesGroup GRANT VIEW SEFINITION ON Sales.- SalesInvoice TO Contoso\SalesGroup</pre>	<pre>Use Contoso GO CREATE USER Contoso\SalesGroup FOR LOGIN Contoso\SalesGroup</pre>
<pre>use master CREATE LOGIN Contoso\SalesGroup FROM WINDOWS GO</pre>	<pre>GRANT EXECUTE, SELECT ON Sales.Review- Invoice TO Contoso\SalesGroup</pre>
<pre>GRANT EXECUTE ON Sales.ReviewInvoice TO Contoso\SalesGroup GRANT SELECT ON Sales.SalesInvoice TO Contoso\SalesGroup</pre>	
<pre>use master CREATE LOGIN Contoso\ContosoSearch WITH PASSWORD=N'Pa\$\$w0rd' GO</pre>	
<pre>GRANT EXECUTE ON Sales.ReviewInvoice TO Contoso\SalesGroup GRANT VIEW DEFINITION ON Sales.SalesIn- voice TO Contoso\SalesGroup</pre>	
<pre>GRANT EXECUTE, SELECT ON Sales.Review- Invoice TO Contoso\SalesGroup</pre>	

#### NEW QUESTION 86

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You are examining information about users, sessions, and processes in an on-premises Microsoft SQL Server 2016 Standard Edition server.

You need to identify waits for resources and return only the following information:

- a list of all databases on the SQL Server instance, along with information about the database files, their paths, and names
- a list of the queries recently executed that use most of memory, disk, and network resources

What should you use?

- A. Activity Monitor  
 B. Sp\_who3  
 C. SQL Server Management Studio (SSMS) Object Explorer  
 D. SQL Server Data Collector  
 E. SQL Server Data Tools (SSDT)

F. SQL Server Configuration Manager

**Answer:** E

**Explanation:**

SQL Server Data Tools (SSDT) is a Microsoft Visual Studio environment for creating business intelligence solutions. SSDT features the Report Designer authoring environment, where you can open, modify, preview, save, and deploy Reporting Services paginated report definitions, shared data sources, shared datasets, and report parts.

References: [https://msdn.microsoft.com/en-us/library/hh272686\(v=vs.103\).aspx](https://msdn.microsoft.com/en-us/library/hh272686(v=vs.103).aspx)

**NEW QUESTION 89**

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it As a result these questions will not appear in the review screen.

Your company has several Microsoft SQL Server instances, Each instance hosts many databases. You observe I/O corruption on some of the instances

You need to perform the following actions:

- Identify databases where the PAGE VERIFY option is not set
- Configure full page protection for the identified databases. Solution: You run the following Transact-SQL statement:

```
SELECT NAME, page_verify_option_desc
FROM master.sys.databases
WHERE page_verify_option_desc = 'NONE'
GO
```

For each database that you identify, you run the following Transact-SQL statement:

```
ALTER DATABASE <database_name>
SET PAGE_VERIFY TORN_PAGE_DETECTION
```

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**NEW QUESTION 94**

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You observe that several indexes are fragmented. You need to rebuild the indexes.

What should you use?

- A. Activity Monitor
- B. Sp\_who3 stored procedure
- C. Object Explorer in the SQL Server Management Studio (SSMS)
- D. SQL Server Data Collector
- E. SQL Server Data Tools (SSDT)
- F. SQL Server Configuration Manager

**Answer:** C

**Explanation:**

How to: Rebuild an Index (SQL Server Management Studio) To rebuild an index

In Object Explorer, connect to an instance of the SQL Server Database Engine and then expand that instance.

Expand Databases, expand the database that contains the table with the specified index, and then expand Tables.

Expand the table in which the index belongs and then expand Indexes.

Right-click the index to rebuild and then click Rebuild.

To start the rebuild operation, click OK.

References: [https://technet.microsoft.com/en-us/library/ms187874\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/ms187874(v=sql.105).aspx)

**NEW QUESTION 99**

- (Exam Topic 1)

A company has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instanced. The environments host several customer databases.

You host a local database and a Stretch database that has a table named Members for one specific customer. You need to provide the customer with information about the space used in the databases.

In the table below, identify the query that provides the required information for each database. NOTE: Make only one selection in each column.



## Answer Area

Query	Local database	Stretch database
EXEC sp_spaceused @updateusage = N'TRUE'	<input type="radio"/>	<input type="radio"/>
EXEC sp_spaceused N'Company.Members'	<input type="radio"/>	<input type="radio"/>
EXEC sp_spaceused N'Company.Members', @mode = 'REMOTE_ONLY'	<input type="radio"/>	<input type="radio"/>

- A. Mastered  
 B. Not Mastered

**Answer:** A

**Explanation:**

## Answer Area

Query	Local database	Stretch database
EXEC sp_spaceused @updateusage = N'TRUE'	<input type="radio"/>	<input type="radio"/>
EXEC sp_spaceused N'Company.Members'	<input checked="" type="radio"/>	<input type="radio"/>
EXEC sp_spaceused N'Company.Members', @mode = 'REMOTE_ONLY'	<input type="radio"/>	<input checked="" type="radio"/>

### NEW QUESTION 104

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company has several Microsoft SQL Server instances. Each instance hosts many databases. You observe I/O corruption on some of the instances.

You need to perform the following actions:

- Identify databases where the PAGE\_VERIFY option is not set.
- Configure full page protection for the identified databases. Solution: You run the following Transact-SQL statement:

```
SELECT NAME, page_verify_option_desc
FROM master.sys.databases
WHERE page_verify_option_desc != 'TORN_PAGE_DETECTION'
GO
```

For each database that you identify, you run the following Transact-SQL statement:

```
ALTER DATABASE <database_name>
SET PAGE_VERIFY TORN_PAGE_DETECTION
```

Does the solution meet the goal?

- A. Yes  
 B. NO

**Answer:** B

#### NEW QUESTION 107

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database environments.

You plan to delegate encryption operations to a user.

You need to grant the user permission to implement cell-level encryption while following the principle of least privilege.

Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View ServerState
- G. View Definition
- H. sysadmin

**Answer:** G

#### Explanation:

The following permissions are necessary to perform column-level encryption, or cell-level encryption.

CONTROL permission on the database.

CREATE CERTIFICATE permission on the database. Only Windows logins, SQL Server logins, and application roles can own certificates. Groups and roles cannot own certificates.

ALTER permission on the table.

Some permission on the key and must not have been denied VIEW DEFINITION permission. References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data>

#### NEW QUESTION 108

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You collect performance metrics on multiple Microsoft SQL Server instances and store the data in a single repository.

You need to examine disk usage, query statistics, and server activity without building custom counters.

What should you use?

- A. Activity Monitor
- B. Sp\_who3 stored procedure
- C. Object Explorer in the Microsoft SQL Server Management Studio (SSMS)
- D. SQL Server Data Collector
- E. SQL Server Data Tools (SSDT)
- F. SQL Server Configuration Manager

**Answer:** D

#### Explanation:

The data collector is a core component of the data collection platform for SQL Server 2017 and the tools that are provided by SQL Server. The data collector provides one central point for data collection across your database servers and applications. This collection point can obtain data from a variety of sources and is not limited to performance data

#### NEW QUESTION 109

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 instance that contains a financial database hosted on a storage area network (SAN). The financial database has the following characteristics:

A data file of 2 terabytes is located on a dedicated LUN (drive D).

A transaction log of 10 GB is located on a dedicated LUN (drive E).

Drive D has 1 terabyte of free disk space.

Drive E has 5 GB of free disk space.

The database is continually modified by users during business hours from Monday through Friday between 09:00 hours and 17:00 hours.

Five percent of the existing data is modified each day.

The Finance department loads large CSV files into a number of tables each business day at 11:15 hours and 15:15 hours by using the BCP or BULK INSERT commands.

Each data load adds 3 GB of data to the database.

These data load operations must occur in the minimum amount of time. A full database backup is performed every Sunday at 10:00 hours.

Backup operations will be performed every two hours (11:00, 13:00, 15:00, and 17:00) during business hours. You implement log shipping of the financial database to another SQL Server 2016 instance. You decide to

failover to this secondary database.

You need to ensure that all transactions will be replicated to the secondary database. Which backup option should you use?

- A. Differential
- B. Transaction Log
- C. FULL
- D. SIMPLE
- E. SKIP
- F. RESTART
- G. STANDBY
- H. CHECKSUM
- I. DBO\_ONLY
- J. COPY\_ONLY

K. NORECOVERY  
L. NO\_CHECKSUM  
M. CONTINUE\_AFTER\_ERROR  
N. BULK\_LOGGED

**Answer:** K

**Explanation:**

Roll back is controlled by the RESTORE statement through the [ RECOVERY | NORECOVERY ] options: NORECOVERY specifies that roll back not occur. This allows roll forward to continue with the next statement in the sequence.

References: <https://docs.microsoft.com/en-us/sql/t-sql/statements/restore-statements-transact-sql>

**NEW QUESTION 111**

- (Exam Topic 1)

You administer all the deployments of Microsoft SQL Server 2016 in your company.

You need to ensure that an OLTP database that uses a storage area network (SAN) remains available if any of the servers fail.

You also need to minimize the amount of storage used by the database. Which configuration should you use?

- A. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
- B. SQL Server that includes an application database configured to perform transactional replication
- C. Two servers configured in the same data center SQL Server Availability Group configured in AsynchronousCommit Availability Mode One server configured as an Active Secondary
- D. Two servers configured in different data centers SQL Server Availability Group configured in AsynchronousCommit Availability Mode
- E. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby
- F. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
- G. SQL Server that includes an application database configured to perform snapshot replication
- H. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance

**Answer:** H

**Explanation:**

A Windows Server Failover Cluster (WSFC) is a group of independent servers that work together to increase the availability of applications and services. SQL Server takes advantage of WSFC services and capabilities to support Always On availability groups and SQL Server Failover Cluster Instances.

References:

<https://docs.microsoft.com/en-us/sql/sql-server/failover-clusters/windows/windows-server-failover-clustering-ws>

**NEW QUESTION 112**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 failover cluster that contains two nodes named Node A and Node B.

A single instance of SQL Server is installed on the cluster.

An additional node named Node C has been added to the existing cluster.

You need to ensure that the SQL Server instance can use all nodes of the cluster. What should you do?

- A. Create a ConfigurationFile.ini file from Node B, and then run the AddNode command-line tool on Node A.
- B. Use Node A to install SQL Server on Node C.
- C. Run the Add Node to SQL Server Failover Cluster Wizard on Node C.
- D. Use Cluster Administrator to add a new Resource Group to Node B.

**Answer:** C

**Explanation:**

To add a node to an existing SQL Server failover cluster

Insert the SQL Server installation media, and from the root folder, double-click Setup.exe. To install from a network share, navigate to the root folder on the share, and then double-click Setup.exe.

The Installation Wizard will launch the SQL Server Installation Center. To add a node to an existing failover cluster instance, click Installation in the left-hand pane. Then, select Add node to a SQL Server failover cluster.

Etc.

References:

<https://docs.microsoft.com/en-us/sql/sql-server/failover-clusters/install/add-or-remove-nodes-in-a-sql-server-fail>

**NEW QUESTION 114**

- (Exam Topic 1)

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You need to examine information about logins, CPU times, and Disk I/O on a particular database in Microsoft Azure.

What should you use?

- A. Activity Monitor
- B. Sp\_who3
- C. SQL Server Management Studio (SSMS) Object Explorer
- D. SQL Server Data Collector
- E. SQL Server Data Tools (SSDT)
- F. SQL Server Configuration Manager

**Answer:** A

**Explanation:**

Activity Monitor displays information about SQL Server processes and how these processes affect the current instance of SQL Server. Activity Monitor is a tabbed document window with the following expandable and collapsible panes: Overview, Active User Tasks, Resource Waits, Data File I/O, and Recent Expensive Queries.

The Activity User Tasks Pane shows information for active user connections to the instance, including the following column:

- \* Login: The SQL Server login name under which the session is currently executing.

The Recent Expensive Queries Pane shows information about the most expensive queries that have been run on the instance over the last 30 seconds, including the following column:

- \* CPU (ms/sec): The rate of CPU use by the query

References: [https://technet.microsoft.com/en-us/library/cc879320\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/cc879320(v=sql.105).aspx)

### NEW QUESTION 115

- (Exam Topic 2)

Overview

Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.

Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.

The new version will use SQL Server 2014.

The ERP application relies on an import process to load supplier data. The import process updates thousands of rows simultaneously, requires exclusive access to the database, and runs daily.

You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables

The current database schema contains a table named OrderDetails.

The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order.

The product price is stored in a table named Products. The Products table was defined by using the SQL\_Latin1\_General\_CP1\_CI\_AS collation.

A column named ProductName was created by using the varchar data type. The database contains a table named Orders.

Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.

The previous version of the ERP application relied on table-level security. Stored Procedures

The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 ...
UPDATE Sales.Table2 ...
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 ...
UPDATE Sales.Table1 ...
COMMIT TRAN
GO
```

Customer Problems Installation Issues

The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.

Index Fragmentation Issues

Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues

Customers who have large amounts of historical purchase order data report that backup time is unacceptable. Search Issues

Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

Missing Data Issues

Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.

Query Performance Issues

Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements



File Storage Requirements  
 The ERP database stores scanned documents that are larger than 2 MB. These files must only be accessed through the ERP application. File access must have the best possible read and write performance.

Data Recovery Requirements  
 If the import process fails, the database must be returned to its prior state immediately.

Security Requirements  
 You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements  
 You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute. You need to recommend a solution that resolves the missing data issue.  
 The solution must minimize the amount of development effort. What should you recommend?

A. Denormalize the Products table.  
 B. Denormalize the OrderDetails table.  
 C. Normalize the OrderDetails table.  
 D. Normalize the Products table.

Answer: D

**Explanation:**

- Scenario:  
 - Missing Data Issues  
 Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.  
 - The current database schema contains a table named OrderDetails. The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order.  
 The product price is stored in a table named Products.

**NEW QUESTION 118**

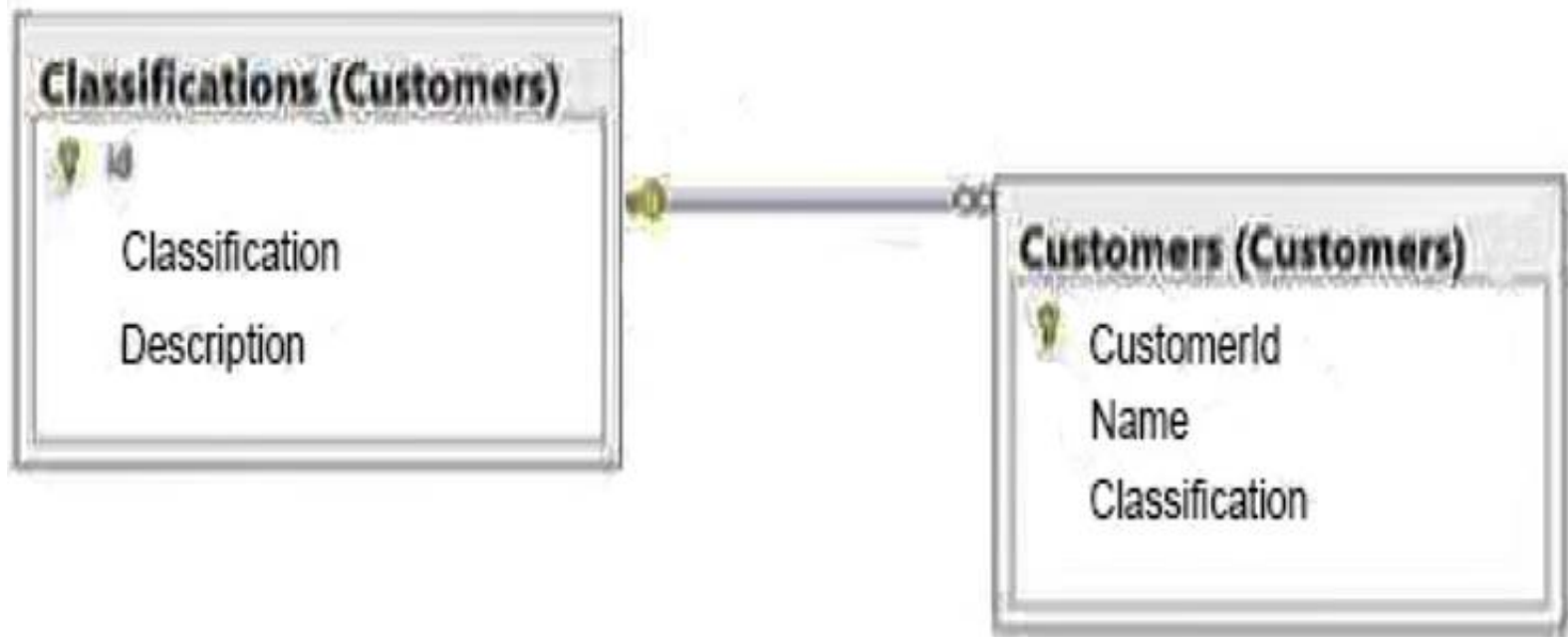
- (Exam Topic 2)  
 You are a database administrator for a Microsoft SQL Server 2016 instance.  
 You need to ensure that data can be replicated from a production server to two reporting servers in real time. You also need to ensure that data on the reporting server is always accessible.  
 Which solution should you use?

A. Availability Groups  
 B. Extended Events  
 C. Snapshot Replication  
 D. Policy Based Management

Answer: A

**NEW QUESTION 119**

- (Exam Topic 2)  
 Overview  
 General Overview  
 ADatum Corporation has offices in Miami and Montreal.  
 The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.  
 Databases  
 Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev. Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.  
 The Customers database contains two tables named Customers and Classifications. The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently. The database is often used for reporting.

A full backup of the database currently takes three hours to complete. Stored Procedures

A stored procedure named USP\_1 generates millions of rows of data for multiple reports. USP\_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.

After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.

A stored procedure named USP\_2 is used to generate a product list. The product list contains the names of products grouped by category.

USP\_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP\_1 and USP\_3.

A stored procedure named USP\_3 is used to update prices. USP\_3 is composed of several UPDATE statements called in sequence from within a transaction.

Currently, if one of the UPDATE statements fails, the stored procedure fails. A stored procedure named USP\_4 calls stored procedures in the Sales, Customers, and Inventory databases.

The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP\_4 uses an EXECUTE AS clause.

All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP\_5 calls several stored procedures in the same database. Security checks are performed each time USP\_5 calls a stored procedure.

You suspect that the security checks are slowing down the performance of USP\_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly. Design Requirements

Data Recovery

You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.

Classification Changes

You plan to change the way customers are classified. The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage

ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling

There is currently no error handling code in any stored procedure.

You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution to minimize the amount of time it takes to execute USP\_5. What should you include in the recommendation?

- A. Enable cross-database chaining.
- B. Use a server role to group all logins.
- C. Use the EXECUTE AS clause in USP\_5.
- D. Copy USP.5 to each database.

**Answer:** A

**Explanation:**

Scenario:

A stored procedure named USP\_5 changes data in multiple databases. Security checks are performed each time USP\_5 accesses a database.

- Cross-database ownership chaining occurs when a procedure in one database depends on objects in another database. A cross-database ownership chain works in the same way as ownership chaining within a single database, except that an unbroken ownership chain requires that all the object owners are mapped to the same login account. If the source object in the source database and the target objects in the target databases are owned by the same login account, SQL Server does not check permissions on the target objects.

## NEW QUESTION 124

- (Exam Topic 2)

Overview

You are a database administrator for a company named Litware, Inc.

Litware is a book publishing house. Litware has a main office and a branch office.

You are designing the database infrastructure to support a new web-based application that is being developed. The web application will be accessed at [www.litwareinc.com](http://www.litwareinc.com). Both internal employees and external partners will use the application.

You have an existing desktop application that uses a SQL Server 2008 database named App1\_DB. App1\_DB will remain in production.

Requirements Planned Changes

You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.

All database files will be stored in a highly available SAN. Database1 will contain two tables named Orders and OrderDetails.

Database1 will also contain a stored procedure named usp\_UpdateOrderDetails.

The stored procedure is used to update order information. The stored procedure queries the Orders table twice each time the procedure executes.

The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.

Database1 will contain several queries that access data in the Database2 tables. Database2 will contain a table named Inventory.

Inventory will contain over 100 GB of data.

The Inventory table will have two indexes: a clustered index on the primary key and a nonclustered index. The column that is used as the primary key will use the identity property.

Database2 will contains a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl\_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements

You have the following requirements:

Costs for new licenses must be minimized.

Private information that is accessed by Application must be stored in a secure format.  
Development effort must be minimized whenever possible.  
The storage requirements for databases must be minimized.  
System administrators must be able to run real-time reports on disk usage.  
The databases must be available if the SQL Server service fails.  
Database administrators must receive a detailed report that contains allocation errors and data corruption.  
Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.  
You must encrypt the backup files to meet regulatory compliance requirements.  
The encryption strategy must minimize changes to the databases and to the applications. You need to recommend a solution to improve the performance of usp.UpdateInventory.  
The solution must minimize the amount of development effort. What should you include in the recommendation?

- A. A table variable
- B. A common table expression
- C. A subquery
- D. A cursor

**Answer:** A

**Explanation:**

- Scenario: Database2 will contain a stored procedure named usp\_UpdateInventory. Usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies.  
- A table variable can be very useful to store temporary data and return the data in the table format.  
- Example: The following example uses a self-join to find the products that are supplied by more than one vendor. Because this query involves a join of the ProductVendor table with itself, the ProductVendor table appears in two roles. To distinguish these roles, you must give the ProductVendor table two different aliases (pv1 and pv2) in the FROM clause. These aliases are used to qualify the column names in the rest of the query. This is an example of the self-join Transact-SQL statement:

```
USE AdventureWorks2008R2;
GO
SELECT DISTINCT pv1.ProductID, pv1.VendorID
FROM Purchasing.ProductVendor pv1
INNER JOIN Purchasing.ProductVendor pv2
ON pv1.ProductID = pv2.ProductID
AND pv1.VendorID <> pv2.VendorID
ORDER BY pv1.ProductID
```

**NEW QUESTION 129**

- (Exam Topic 2)

You plan to create a database.

The database will be used by a Microsoft .NET application for a special event that will last for two days. During the event, data must be highly available. After the event, the database will be deleted. You need to recommend a solution to implement the database while minimizing costs. The solution must not affect any existing applications. What should you recommend? More than one answer choice may achieve the goal. Select the BEST answer.

- A. Max Degree of Parallelism
- B. Resource Governor
- C. Windows System Resource Manager (WSRM)
- D. Processor affinity

**Answer:** D

**NEW QUESTION 134**

- (Exam Topic 2)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

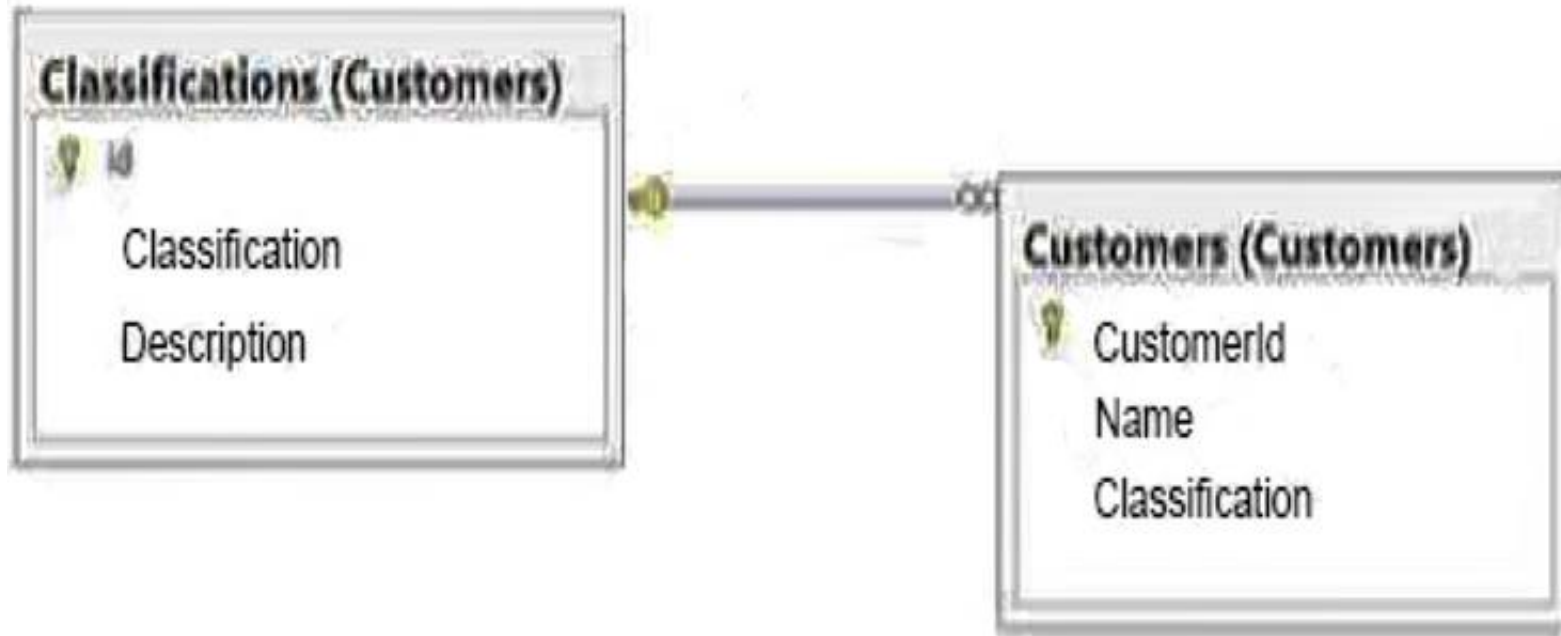
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases

Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev. Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.

The Customers database contains two tables named Customers and Classifications. The following graphic shows the relevant portions of the tables:





The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently. The database is often used for reporting.

A full backup of the database currently takes three hours to complete. Stored Procedures

A stored procedure named USP\_1 generates millions of rows of data for multiple reports. USP\_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.

After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.

A stored procedure named USP\_2 is used to generate a product list. The product list contains the names of products grouped by category.

USP\_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP\_1 and USP\_3.

A stored procedure named USP\_3 is used to update prices. USP\_3 is composed of several UPDATE statements called in sequence from within a transaction.

Currently, if one of the UPDATE statements fails, the stored procedure fails. A stored procedure named USP\_4 calls stored procedures in the Sales, Customers, and Inventory databases.

The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP\_4 uses an EXECUTE AS clause.

All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP\_5 calls several stored procedures in the same database. Security checks are performed each time USP\_5 calls a stored procedure.

You suspect that the security checks are slowing down the performance of USP\_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly. Design Requirements

Data Recovery

You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.

Classification Changes

You plan to change the way customers are classified. The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage

ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups. Error Handling

There is currently no error handling code in any stored procedure.

You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a disaster recovery solution for the Dev database. What should you include in the recommendation?

- A. The simple recovery model and full backups
- B. The full recovery model, full backups, and transaction log backups
- C. The full recovery model, full backups, and differential backups
- D. The bulk-logged recovery model and full backups

**Answer: A**

**Explanation:**

Scenario:

You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.

- The simple recovery model provides the simplest form of backup and restore. This recovery model supports both database backups and file backups, but does not support log backups. Transaction log data is backed up only with the associated user data.

The absence of log backups simplifies managing backup and restore. However, a database can be restored only to the end of the most recent backup.

## NEW QUESTION 138

- (Exam Topic 2)

Overview

Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.

Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.

The new version will use SQL Server 2014.

The ERP application relies on an import process to load supplier data. The import process updates thousands of rows simultaneously, requires exclusive access to the database, and runs daily.



You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

#### Tables

The current database schema contains a table named OrderDetails.

The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order.

The product price is stored in a table named Products. The Products table was defined by using the SQL\_Latin1\_General\_CP1\_CI\_AS collation.

A column named ProductName was created by using the varchar data type. The database contains a table named Orders.

Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.

The previous version of the ERP application relied on table-level security. Stored Procedures

The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 ...
UPDATE Sales.Table2 ...
COMMIT TRAN
GO
```

```
CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 ...
UPDATE Sales.Table1 ...
COMMIT TRAN
GO
```

#### Customer Problems Installation Issues

The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.

#### Index Fragmentation Issues

Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

#### Backup Issues

Customers who have large amounts of historical purchase order data report that backup time is unacceptable. Search Issues

Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

#### Missing Data Issues

Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.

#### Query Performance Issues

Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

#### Design Requirements

##### File Storage Requirements

The ERP database stores scanned documents that are larger than 2 MB. These files must only be accessed through the ERP application. File access must have the best possible read and write performance.

##### Data Recovery Requirements

If the import process fails, the database must be returned to its prior state immediately. Security Requirements

You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

##### Concurrency Requirements

You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

You need to recommend a solution that addresses the concurrency requirement. What should you recommend?

- A. Call the stored procedures in a Distributed Transaction Coordinator (DTC) transaction.
- B. Modify the stored procedures to update tables in the same order for all of the stored procedures.
- C. Make calls to Sales.Proc1 and Sales.Proc2 synchronously.
- D. Break each stored procedure into two separate procedures, one that changes Sales.Table1 and one that changes Sales.Table2.

**Answer: B**

**Explanation:**

- Concurrency Requirements

You must reduce the likelihood of deadlocks occurring when Sales.Proc1 and Sales.Proc2 execute.

**NEW QUESTION 141**

- (Exam Topic 2)

You are designing a database named DB1.

Changes will be deployed to DB1 every Wednesday night.

You need to recommend a strategy to deploy the changes to DB1. The strategy must meet the following requirements:

The strategy must not disrupt backup operations.

DB1 must be unavailable to users while the changes are deployed.

You must be able to undo quickly the entire operation.

What should you recommend? More than one answer choice may achieve the goal. Select the BEST answer.

- A. Perform a copy-only database backup before the changes are deployed.If the deployment fails, restore the database to another server and recover the original.Objects from the restored database.
- B. Create a database snapshot.If the deployment fails, recover the objects from the database snapshot.
- C. Create a database snapshot.If the deployment fails, revert the database to the database snapshot.
- D. Perform a full database backup before the changes are deployed.If the deployment fails, restore the database to another server and recover the original objects from the restored database.

**Answer: C**

**NEW QUESTION 144**

- (Exam Topic 2)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

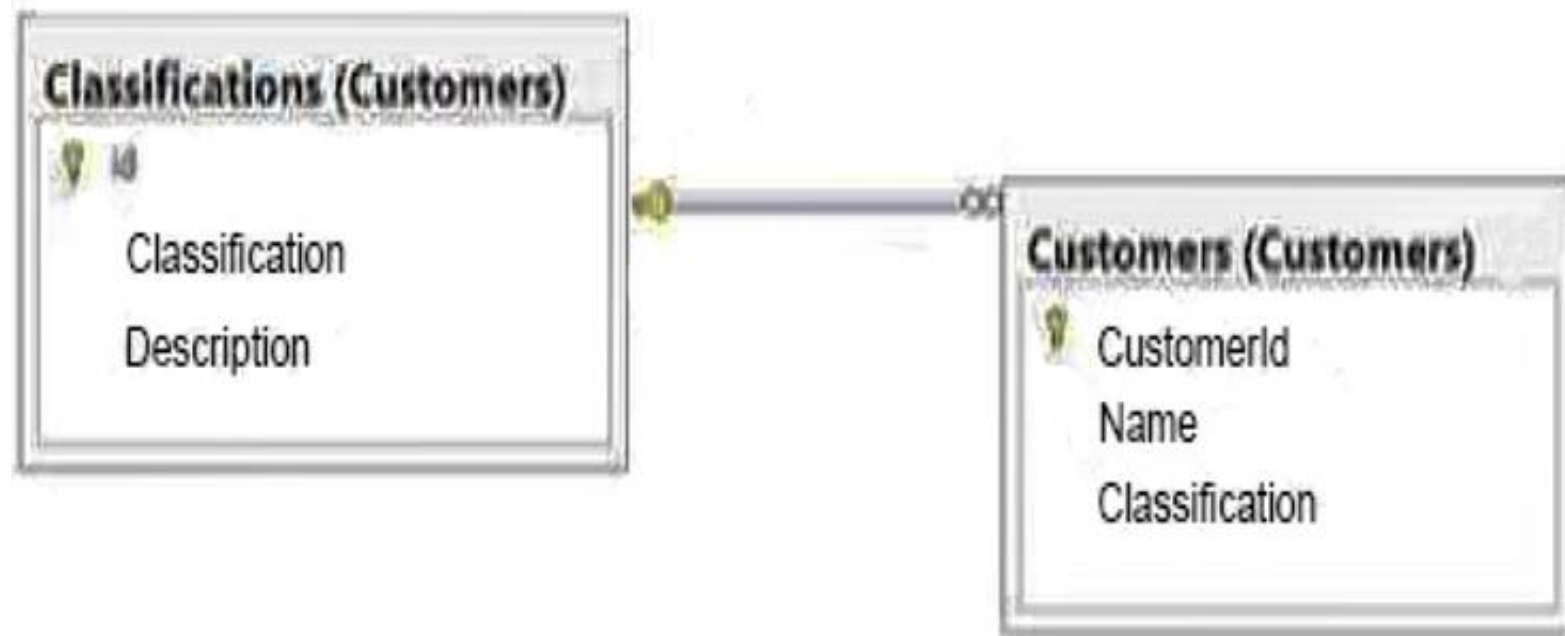
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases

Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev. Servers and databases are managed by a team of database administrators. Currently, all of the database

administrators have the same level of permissions on all of the servers and all of the databases.

The Customers database contains two tables named Customers and Classifications. The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
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3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently. The database is often used for reporting.

A full backup of the database currently takes three hours to complete. Stored Procedures

A stored procedure named USP\_1 generates millions of rows of data for multiple reports. USP\_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.

After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.

A stored procedure named USP\_2 is used to generate a product list. The product list contains the names of products grouped by category.

USP\_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP\_1 and USP\_3.

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Currently, if one of the UPDATE statements fails, the stored procedure fails. A stored procedure named USP\_4 calls stored procedures in the Sales, Customers, and Inventory databases.

The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP\_4 uses an EXECUTE AS clause.

All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP\_5 calls several stored procedures in the same database. Security checks are performed each time USP\_5 calls a stored procedure.

You suspect that the security checks are slowing down the performance of USP\_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly. Design Requirements

Data Recovery

You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.  
 You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.

**Classification Changes**

You plan to change the way customers are classified. The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

**Storage**

ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

**Error Handling**

There is currently no error handling code in any stored procedure.

You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution for the planned changes to the customer classifications. What should you recommend? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Add a row to the Customers table each time a classification changes.
- B. Add columns for each classification to the Customers table.
- C. Add a table to track any changes made to the classification of each customer.
- D. Add a column to the Classifications table to track the status of each classification.
- E. Implement change data capture.

**Answer:** CD

**Explanation:**

Scenario:

You plan to change the way customers are classified.

The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future.

**NEW QUESTION 146**

- (Exam Topic 2)

**Overview**

**General Overview**

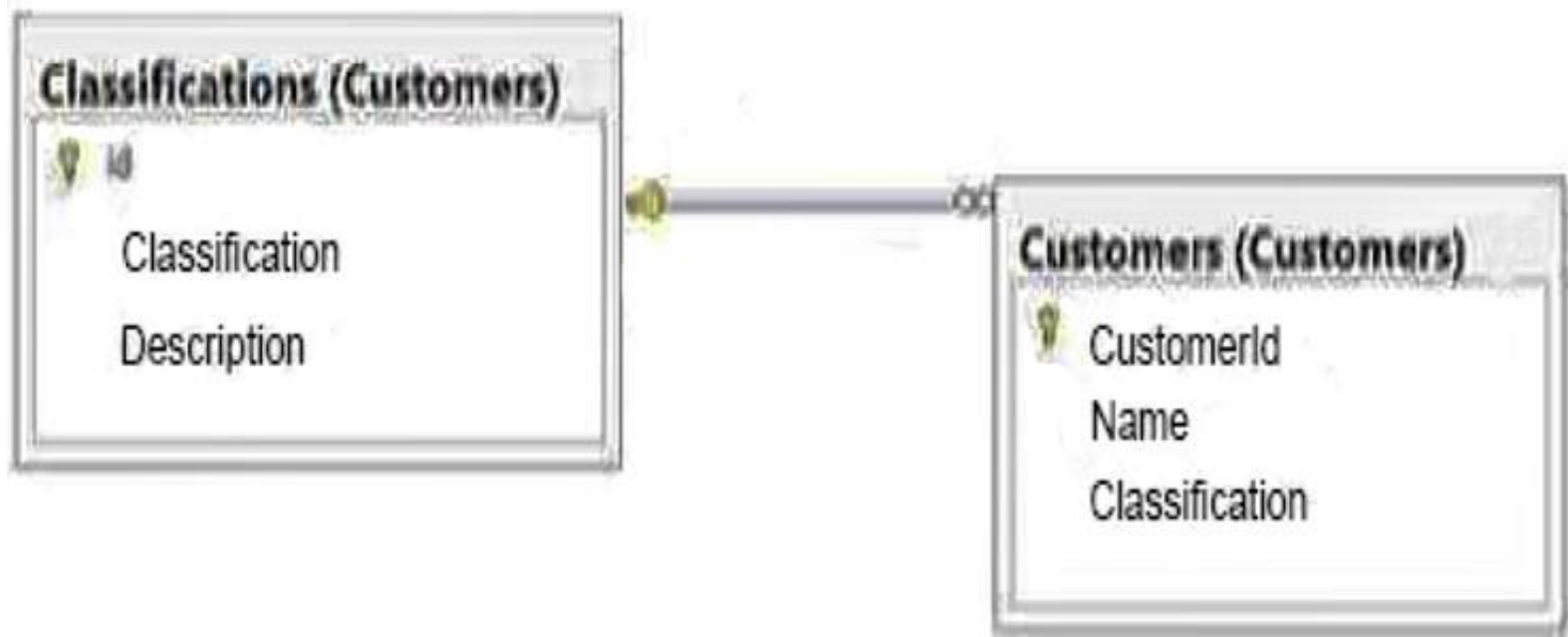
ADatum Corporation has offices in Miami and Montreal.

The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

**Databases**

Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev. Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.

The Customers database contains two tables named Customers and Classifications. The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently. The database is often used for reporting.

A full backup of the database currently takes three hours to complete. Stored Procedures

A stored procedure named USP\_1 generates millions of rows of data for multiple reports. USP\_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.

After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.

A stored procedure named USP\_2 is used to generate a product list. The product list contains the names of products grouped by category.

USP\_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP\_1 and USP\_3.

A stored procedure named USP\_3 is used to update prices. USP\_3 is composed of several UPDATE statements called in sequence from within a transaction.

Currently, if one of the UPDATE statements fails, the stored procedure fails. A stored procedure named USP\_4 calls stored procedures in the Sales, Customers, and Inventory databases.

The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP\_4 uses an EXECUTE AS clause.

All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP\_5 calls several stored procedures in the same database. Security checks are performed each time USP\_5 calls a stored procedure.



You suspect that the security checks are slowing down the performance of USP\_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly. Design Requirements

Data Recovery

You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.

Classification Changes

You plan to change the way customers are classified. The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage

ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling

There is currently no error handling code in any stored procedure.

You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a change to USP\_3 to ensure that the procedure completes only if all of the UPDATE statements complete. Which change should you recommend?

- A. Set the XACT\_ABORT option to off
- B. Set the XACT\_ABORT option to on.
- C. Set the IMPLICIT\_TRANSACTIONS option to off.
- D. Set the IMPLICIT\_TRANSACTIONS option to on.

**Answer: B**

**Explanation:**

Scenario:

A stored procedure named USP\_3 is used to update prices. USP\_3 is composed of several UPDATE statements called in sequence from within a transaction.

Currently, if one of the UPDATE statements fails, the stored procedure continues to execute.

- When SET XACT\_ABORT is ON, if a Transact-SQL statement raises a run-time error, the entire transaction is terminated and rolled back.

#### NEW QUESTION 149

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 database that has Trustworthy set to On.

You create a stored procedure that returns database-level information from Dynamic Management Views. You grant User1 access to execute the stored procedure.

You need to ensure that the stored procedure returns the required information when User1 executes the stored procedure.

You need to achieve this goal by granting the minimum permissions required.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

- A. Create a SQL Server login that has VIEW SERVER STATE permission
- B. Create an application role and a secured password for the role.
- C. Modify the stored procedure to include the EXECUTE AS OWNER statement
- D. Grant VIEW SERVER STATE permissions to the owner of the stored procedure.
- E. Create a SQL Server login that has VIEW SERVER STATE permission
- F. Modify the stored procedure to include the EXECUTE AS {newlogin} statement.
- G. Grant the db\_owner role on the database to User1.
- H. Grant the sysadmin role on the database to User1.

**Answer: BC**

**Explanation:**

References:

<http://msdn.microsoft.com/en-us/library/ms187861.aspx> <http://msdn.microsoft.com/en-us/library/ms191291.aspx>

#### NEW QUESTION 154

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 server. You plan to deploy new features to an application.

You need to evaluate existing and potential clustered and non-clustered indexes that will improve performance.

What should you do?

- A. Query the sys.dm\_db\_index\_usage\_stats DMV.
- B. Query the sys.dm\_db\_missing\_index\_details DMV.
- C. Use the Database Engine Tuning Advisor.
- D. Query the sys.dm\_db\_missing\_index\_columns DMV.

**Answer: C**

**Explanation:**

The Microsoft Database Engine Tuning Advisor (DTA) analyzes databases and makes recommendations that you can use to optimize query performance. You can use the Database Engine Tuning Advisor to select and create an optimal set of indexes, indexed views, or table partitions without having an expert understanding of the database structure or the internals of SQL Server. Using the DTA, you can perform the following tasks.

Troubleshoot the performance of a specific problem query Tune a large set of queries across one or more databases

Perform an exploratory what-if analysis of potential physical design changes Manage storage space

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/database-engine-tuning-advisor>

#### NEW QUESTION 156

- (Exam Topic 2)

Your company has offices in Seattle and Montreal.

The network contains two servers named Server1 and Server2 that have SQL Server 2012 installed. The servers are located in separate building within your campus.

The latency of the WAN link between the buildings is less than 10 ms.

You plan to implement an AlwaysOn availability group on both servers. You need to recommend a failover type for the availability group.

What should you recommend?

- A. Asynchronous automatic failover
- B. Synchronous manual failover
- C. Asynchronous manual failover
- D. Synchronous automatic failover

**Answer: D**

#### NEW QUESTION 160

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 instance.

After a routine shutdown, the drive that contains tempdb fails. You need to be able to start the SQL Server.

What should you do?

- A. Modify tempdb location in startup parameters.
- B. Start SQL Server in minimal configuration mode.
- C. Start SQL Server in single-user mode.
- D. Configure SQL Server to bypass Windows application logging.

**Answer: B**

#### NEW QUESTION 162

- (Exam Topic 2)

Overview

You are a database administrator for a company named Litware, Inc.

Litware is a book publishing house. Litware has a main office and a branch office.

You are designing the database infrastructure to support a new web-based application that is being developed. The web application will be accessed at [www.litwareinc.com](http://www.litwareinc.com). Both internal employees and external partners will use the application.

You have an existing desktop application that uses a SQL Server 2008 database named App1\_DB. App1\_DB will remain in production.

Requirements Planned Changes

You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.

All database files will be stored in a highly available SAN. Database1 will contain two tables named Orders and OrderDetails.

Database1 will also contain a stored procedure named usp\_UpdateOrderDetails.

The stored procedure is used to update order information. The stored procedure queries the Orders table twice each time the procedure executes.

The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.

Database1 will contain several queries that access data in the Database2 tables. Database2 will contain a table named Inventory.

Inventory will contain over 100 GB of data.

The Inventory table will have two indexes: a clustered index on the primary key and a nonclustered index.

The column that is used as the primary key will use the identity property.

Database2 will contain a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl\_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements

You have the following requirements:

Costs for new licenses must be minimized.

Private information that is accessed by Application must be stored in a secure format.

Development effort must be minimized whenever possible.

The storage requirements for databases must be minimized.

System administrators must be able to run real-time reports on disk usage.

The databases must be available if the SQL Server service fails.

Database administrators must receive a detailed report that contains allocation errors and data corruption.

Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.

The encryption strategy must minimize changes to the databases and to the applications. You need to recommend an isolation level for usp\_UpdateOrderDetails.

Which isolation level should you recommend?

- A. Read committed
- B. Repeatable read
- C. Read uncommitted
- D. Serializable

**Answer: B**

#### Explanation:

- Scenario: Database1 will also contain a stored procedure named usp\_UpdateOrderDetails. The stored procedure is used to update order information. The stored procedure queries the Orders table twice each time the procedure executes. The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.

- REPEATABLE READ Specifies that statements cannot read data that has been modified but not yet committed by other transactions and that no other transactions can modify data that has been read by the current transaction until the current transaction completes.

#### NEW QUESTION 164

- (Exam Topic 2)

## Overview

You are a database administrator for a company named Litware, Inc.

Litware is a book publishing house. Litware has a main office and a branch office.

You are designing the database infrastructure to support a new web-based application that is being developed. The web application will be accessed at [www.litwareinc.com](http://www.litwareinc.com). Both internal employees and external partners will use the application.

You have an existing desktop application that uses a SQL Server 2008 database named App1\_DB. App1\_DB will remain in production.

## Requirements Planned Changes

You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.

All database files will be stored in a highly available SAN. Database1 will contain two tables named Orders and OrderDetails.

Database1 will also contain a stored procedure named usp\_UpdateOrderDetails.

The stored procedure is used to update order information. The stored procedure queries the Orders table twice each time the procedure executes.

The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.

Database1 will contain several queries that access data in the Database2 tables. Database2 will contain a table named Inventory.

Inventory will contain over 100 GB of data.

The Inventory table will have two indexes: a clustered index on the primary key and a nonclustered index. The column that is used as the primary key will use the identity property.

Database2 will contain a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl\_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

## Business Requirements

You have the following requirements:

Costs for new licenses must be minimized.

Private information that is accessed by Application must be stored in a secure format.

Development effort must be minimized whenever possible.

The storage requirements for databases must be minimized.

System administrators must be able to run real-time reports on disk usage.

The databases must be available if the SQL Server service fails.

Database administrators must receive a detailed report that contains allocation errors and data corruption.

Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.

The encryption strategy must minimize changes to the databases and to the applications. You need to recommend a database reporting solution that meets the business requirements. What should you include in the recommendation?

- A. Data collection
- B. Performance Monitor
- C. A maintenance plan
- D. A dynamic management view

**Answer: A**

## Explanation:

1. Scenario: System administrators must be able to run real-time reports on disk usage.

2. The data collector provides an historical report for each of the System Data collection sets. Each of the following reports use data that is stored in the management data warehouse:

You can use these reports to obtain information for monitoring system capacity and troubleshooting system performance.

## NEW QUESTION 167

- (Exam Topic 2)

You are building a stored procedure for a SQL Azure database. The procedure will add multiple rows to a table. You need to design the stored procedure to meet the following requirements:

If any of the new rows violates a table constraint, then no further additions must be attempted and all changes made by the stored procedure must be discarded.

If any errors occur, a row must be added to an audit table, and the original error must be returned to the caller of the stored procedure.

What should you include in the design?

- A. An implicit transaction that has XACT\_ABORT enabled
- B. An explicit transaction that has XACT\_ABORT disabled
- C. An implicit transaction that has error handling enabled
- D. An explicit transaction that has error handling enabled

**Answer: D**

## Explanation:

References:

[http://technet.microsoft.com/en-us/library/ms175127\(v=SQL.105\).aspx](http://technet.microsoft.com/en-us/library/ms175127(v=SQL.105).aspx)

## NEW QUESTION 168

- (Exam Topic 2)

You are creating a database that will store usernames and credit card numbers for an application. You need to recommend a solution to store and reuse the credit card numbers in the database.

What should you recommend? More than one answer choice may achieve the goal. Select the BEST answer.

- A. Data encryption
- B. Transparent Data Encryption (TDE)
- C. Encrypting File System (EFS)
- D. Data hashing

**Answer: A**

## Explanation:



If we are going to encrypt credit card number for storage, then we should have Data Encryption Key(DEK) for encrypting the credit card number.

## NEW QUESTION 173

- (Exam Topic 2)

Overview

Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.

Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.

The new version will use SQL Server 2014.

The ERP application relies on an import process to load supplier data. The import process updates thousands of rows simultaneously, requires exclusive access to the database, and runs daily.

You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables

The current database schema contains a table named OrderDetails.

The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order.

The product price is stored in a table named Products. The Products table was defined by using the SQL\_Latin1\_General\_CP1\_CI\_AS collation.

A column named ProductName was created by using the varchar data type. The database contains a table named Orders.

Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.

The previous version of the ERP application relied on table-level security. Stored Procedures

The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 ...
UPDATE Sales.Table2 ...
COMMIT TRAN
GO
```

```
CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 ...
UPDATE Sales.Table1 ...
COMMIT TRAN
GO
```

Customer Problems Installation Issues

The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.

Index Fragmentation Issues

Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues

Customers who have large amounts of historical purchase order data report that backup time is unacceptable. Search Issues

Users report that when they search product names, the search results exclude product names that contain

accents, unless the search string includes the accent. Missing Data Issues

Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.

Query Performance Issues

Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements

File Storage Requirements

The ERP database stores scanned documents that are larger than 2 MB. These files must only be accessed through the ERP application. File access must have the best possible read and write performance.

Data Recovery Requirements

If the import process fails, the database must be returned to its prior state immediately. Security Requirements

You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements

You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute. You need to recommend a solution that addresses the installation issues.

What should you include in the recommendation?

- A. Windows logins
- B. Server roles
- C. Contained users
- D. Database roles

Answer: C

Explanation:

- Scenario: Installation Issues The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.
- Creating contained users enables the user to connect directly to the contained database. This is a very significant feature in high availability and disaster recovery scenarios such as in an AlwaysOn solution. If the users are contained users, in case of failover, people would be able to connect to the secondary without creating logins on the instance hosting the secondary. This provides an immediate benefit.

NEW QUESTION 178

- (Exam Topic 2)

You are planning to deploy a database to Windows Azure SQL Database.

You need to design a stored procedure to update rows. The stored procedure must meet the following requirements:

If more than one row is updated, an error must be raised to the application and the update must be discarded.

The stored procedure must be designed to maximize concurrency.

What should you include in the design? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Actions

Raise an error in a catch block

Commit the transaction in a finally block

Read the @@ROWCOUNT system variable

Perform the update in a try block

Raise an error and roll back the transaction if the row count is less than 1

Issue a SELECT statement to count the number of rows

Set the isolation level to serializable

Begin an explicit transaction

Work Area

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Note:

- Read Committed is SQL Server's default isolation level.
- @@ROWCOUNT returns the number of rows affected by the last statement.
- Using TRY...CATCH in a transaction

The following example shows how a TRY...CATCH block works inside a transaction. The statement inside the TRY block generates a constraint violation error.

```
- BEGIN TRANSACTION;  
- BEGIN TRY
```

- Generate a constraint violation error.

```
DELETE FROM Production.Product
WHERE ProductID = 980;
END TRY
BEGIN CATCH
SELECT
ERROR_NUMBER() AS ErrorNumber
,ERROR_SEVERITY() AS ErrorSeverity
,ERROR_STATE() AS ErrorState
,ERROR_PROCEDURE() AS ErrorProcedure
,ERROR_LINE() AS ErrorLine
,ERROR_MESSAGE() AS ErrorMessage;
IF @@TRANCOUNT > 0
ROLLBACK TRANSACTION;
END CATCH;
IF @@TRANCOUNT > 0
COMMIT TRANSACTION;
GO
```

#### NEW QUESTION 181

- (Exam Topic 2)

You have a SQL Server 2014 environment That contains 20 servers.

The corporate security policy states that all SQL Server 2014 instances must meet specific security standards. You need to recommend a management strategy for the SQL Server 2014 servers.

What should you include in the recommendation? More than one answer choice may achieve the goal. Select the BEST answer.

- A. Multi server jobs
- B. Policy-Based Management
- C. Common criteria compliance
- D. Maintenance plans

**Answer: B**

#### Explanation:

Policy-Based Management is a system for managing one or more instances of SQL Server. When SQL Server policy administrators use Policy-Based Management, they use SQL Server Management Studio to create policies to manage entities on the server, such as the instance of SQL Server, databases, or other SQL Server objects.

#### NEW QUESTION 182

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 failover cluster.

You need to ensure that a failover occurs when the server diagnostics returns query\_processing error. Which server configuration property should you set?

- A. SqlOumperDumpFlags
- B. FailureConditionLevel
- C. HealthCheckTimeout
- D. SqlDumperDumpPath

**Answer: B**

#### Explanation:

The SQL Server Database Engine resource DLL determines whether the detected health status is a condition for failure using the FailureConditionLevel property. The FailureConditionLevel property defines which detected health statuses cause restarts or failovers. Multiple levels of options are available, ranging from no automatic restart or failover to all possible failure conditions resulting in an automatic restart or failover.

References:

<https://docs.microsoft.com/en-us/sql/sql-server/failover-clusters/windows/failover-policy-for-failover-cluster-ins>

#### NEW QUESTION 186

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 database named Contoso on a server named Server01.

You need to diagnose deadlocks that happen when executing a specific set of stored procedures by recording events and playing them back on a different test server.

What should you create?

- A. an Extended Event session
- B. a Policy
- C. a Database Audit Specification
- D. an Alert
- E. a Server Audit Specification
- F. a SQL Profiler Trace
- G. a Resource Pool

**Answer: F**

#### Explanation:

References:



<http://msdn.microsoft.com/en-us/library/ms188246.aspx>

**NEW QUESTION 190**

- (Exam Topic 2)

You need to recommend a backup process for an Online Transaction Processing (OLTP) database. The process must meet the following requirements:

Ensure that if a hardware failure occurs, you can bring the database online with a minimum amount of data loss.

Minimize the amount of administrative effort required to restore any lost data.

What should you include in the recommendation? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Create a database snapshot

Perform a differential backup of the database every night

Ship the logs to a secondary server

Perform a backup of the transaction log every hour

Set the database to the simple recovery model

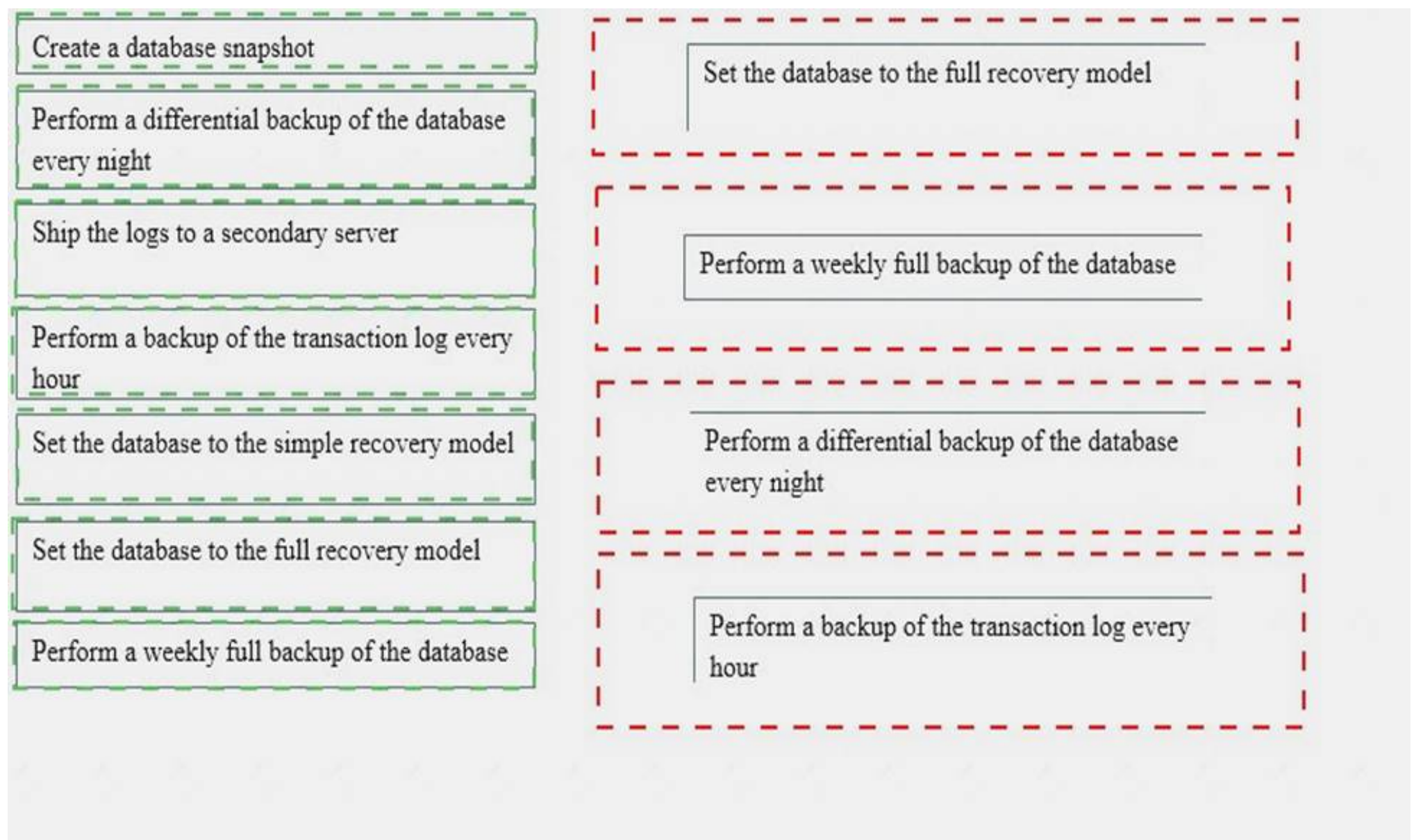
Set the database to the full recovery model

Perform a weekly full backup of the database

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**



#### NEW QUESTION 192

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 database named Contoso on a server named Server01. You need to be notified immediately when fatal errors occur on Server01.

What should you create?

- A. an Alert
- B. a Server Audit Specification
- C. an Extended Event session
- D. a Resource Pool
- E. a Policy
- F. a SQL Profiler Trace
- G. a Database Audit Specification

**Answer:** A

#### Explanation:

References:

<http://www.sqlskills.com/blogs/glenn/creating-sql-server-agent-alerts-for-critical-errors/>

#### NEW QUESTION 196

- (Exam Topic 2)

Overview

Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.

Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.

The new version will use SQL Server 2014.

The ERP application relies on an import process to load supplier data. The import process updates thousands of rows simultaneously, requires exclusive access to the database, and runs daily.

You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables

The current database schema contains a table named OrderDetails.

The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order.

The product price is stored in a table named Products. The Products table was defined by using the SQL\_Latin1\_General\_CP1\_CI\_AS collation.

A column named ProductName was created by using the varchar data type. The database contains a table named Orders.

Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.

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GO
```

```
CREATE PROC Sales.Proc2
AS
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UPDATE Sales.Table1 ...
COMMIT TRAN
GO
```

#### Customer Problems Installation Issues

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.

#### Index Fragmentation Issues

Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

#### Backup Issues

Customers who have large amounts of historical purchase order data report that backup time is unacceptable. Search Issues

Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

#### Missing Data Issues

Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.

#### Query Performance Issues

Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

#### Design Requirements

#### File Storage Requirements

The ERP database stores scanned documents that are larger than 2 MB. These files must only be accessed through the ERP application. File access must have the best possible read and write performance.

#### Data Recovery Requirements

If the import process fails, the database must be returned to its prior state immediately. Security Requirements

You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

#### Concurrency Requirements

You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

You need to recommend a solution that addresses the index fragmentation and index width issue. What should you include in the recommendation? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Change the data type of the lastModified column to smalldatetime.
- B. Remove the lastModified column from the clustered index.
- C. Change the data type of the modifiedBy column to tinyint.
- D. Change the data type of the id column to bigint.
- E. Remove the modifiedBy column from the clustered index.
- F. Remove the id column from the clustered index.

**Answer:** BE

#### Explanation:

Scenario: Index Fragmentation Issues Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)



### NEW QUESTION 200

- (Exam Topic 2)

You administer a single server that contains a Microsoft SQL Server 2016 default instance.

You plan to install a new application that requires the deployment of a database on the server. The application login requires sysadmin permissions.

You need to ensure that the application login is unable to access other production databases. What should you do?

- A. Use the SQL Server default instance and configure an affinity mask.
- B. Install a new named SQL Server instance on the server.
- C. Use the SQL Server default instance and enable Contained Databases.
- D. Install a new default SQL Server instance on the server.

**Answer: B**

#### Explanation:

SQL Server supports multiple instances of SQL Server on a single server or processor, but only one instance can be the default instance. All others must be named instances. A computer can run multiple instances of SQL Server concurrently, and each instance runs independently of other instances.

References: [https://msdn.microsoft.com/en-us/library/ms143531\(v=SQL.105\).aspx](https://msdn.microsoft.com/en-us/library/ms143531(v=SQL.105).aspx)

### NEW QUESTION 203

- (Exam Topic 2)

Overview

You are a database administrator for a company named Litware, Inc.

Litware is a book publishing house. Litware has a main office and a branch office.

You are designing the database infrastructure to support a new web-based application that is being developed. The web application will be accessed at [www.litwareinc.com](http://www.litwareinc.com). Both internal employees and external partners will use the application.

You have an existing desktop application that uses a SQL Server 2008 database named App1\_DB. App1\_DB will remain in production.

Requirements Planned Changes

You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.

All database files will be stored in a highly available SAN. Database1 will contain two tables named Orders and OrderDetails.

Database1 will also contain a stored procedure named usp\_UpdateOrderDetails.

The stored procedure is used to update order information. The stored procedure queries the Orders table twice each time the procedure executes.

The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.

Database1 will contain several queries that access data in the Database2 tables. Database2 will contain a table named Inventory.

Inventory will contain over 100 GB of data.

The Inventory table will have two indexes: a clustered index on the primary key and a nonclustered index. The column that is used as the primary key will use the identity property.

Database2 will contain a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named App1\_Db1 as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements

You have the following requirements:

Costs for new licenses must be minimized.

Private information that is accessed by Application must be stored in a secure format.

Development effort must be minimized whenever possible.

The storage requirements for databases must be minimized.

System administrators must be able to run real-time reports on disk usage.

The databases must be available if the SQL Server service fails.

Database administrators must receive a detailed report that contains allocation errors and data corruption.

Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.

The encryption strategy must minimize changes to the databases and to the applications.

You need to recommend a solution to synchronize Database2 to App1\_Db1. What should you recommend?

- A. Change data capture
- B. Snapshot replication
- C. Master Data Services
- D. Transactional replication

**Answer: D**

#### Explanation:

Scenario:

- Data from Database2 will be accessed periodically by an external application named

Application1. The data from Database2 will be sent to a database named App1\_Db1 as soon as changes occur to the data in Database2.

- All data in Database2 is recreated each day and does not change until the next data creation process.

### NEW QUESTION 204

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