

# 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)

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 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 [▼] , 1
' max worker threads '
' show advanced options '
' cost threshold for parallelism '
' max degree of parallelism '

GO
RECONFIGURE WITH OVERRIDE
GO
sp_configure [▼] , 0
' max worker threads '
' show advanced options '
' cost threshold for parallelism '
' max degree of parallelism '

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 are a database administrator for a Microsoft SQL Server 2016 environment.

You want to deploy a new application that will scale out the workload to at least five different SQL Server instances.

You need to ensure that for each copy of the database, users are able to read and write data that will then be synchronized between all of the database instances.

Which feature should you use?

- A. Database Mirroring
- B. Peer-to-Peer Replication
- C. Log Shipping
- D. Availability Groups

**Answer:** B

**NEW QUESTION 4**

- (Exam Topic 1)

You administer a single server that contains a Microsoft SQL Server 2016 default instance on which several production databases have been deployed.

You plan to install a new ticketing application that requires the deployment of a database on the server. The SQL login for this application requires sysadmin permissions. You need to ensure that the login for the ticketing application cannot access other production databases.

What should you do?

- A. Use the SQL Server default instance and enable Contained Databases.
- B. Use the SQL Server default instance and configure a user-defined server rol
- C. Add the login for the ticketing application to this role.
- D. Install a new named SQL Server instance on the server.
- E. Install a new default SQL Server instance on the server.

**Answer:** C

**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 5**

- (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 6**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 server that hosts a transactional database and a reporting database.

The transactional database is updated through a web application and is operational throughout the day. The reporting database is only updated from the transactional database.

The recovery model and backup schedule are configured as shown in the following table:

Database	Description
Transactional database	Recovery model: <ul style="list-style-type: none"> <li>• Full</li> </ul> Backup schedule: <ul style="list-style-type: none"> <li>• Full database backup: midnight, daily</li> <li>• Differential database backup: on the hour, every two hours starting at 02:00 hours except at 00:00 hours</li> <li>• Log backup: every half hour, except at the times of full and differential backups</li> </ul>
Reporting database	Recovery model: <ul style="list-style-type: none"> <li>• Simple</li> </ul> Backup schedule: <ul style="list-style-type: none"> <li>• Full database backup: 01:00 hours daily</li> <li>• Differential database backup: 13:00 hours daily</li> </ul> Data updates: <ul style="list-style-type: none"> <li>• Changes in data are updated from the transactional database to the reporting database at 00:30 hours and at 12:30 hours</li> <li>• The update takes 15 minutes</li> </ul>

At 16:20 hours, you discover that pages 17, 137, and 205 on one of the database files are corrupted on the transactional database. You need to ensure that the transactional database is restored. You also need to ensure that data loss is minimal.

What should you do?

- A. Perform a partial restore.
- B. Restore the latest full backup, and restore the latest differential backup
- C. Then, restore each log backup taken before the time of failure from the most recent differential backup.
- D. Perform a point-in-time restore.
- E. Restore the latest full backup.
- F. Restore the latest full backup, and restore the latest differential backup
- G. Then, restore the latest log backup.
- H. Perform a page restore.
- I. Restore the latest full backup
- J. Then, restore each differential backup taken before the time of failure from the most recent full backup.
- K. Restore the latest full backup
- L. Then, restore the latest differential backup.

**Answer: F**

**Explanation:**

The goal of a page restore is to restore one or more damaged pages without restoring the whole database. Typically, pages that are candidates for restore have been marked as "suspect" because of an error that is encountered when accessing the page.

Note: Requirements for Restoring Pages

A page restore is subject to the following requirements:

The databases must be using the full or bulk-logged recovery model. Etc.

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

**NEW QUESTION 7**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database.

You want to make a full backup of the database to a file on disk. In doing so, you need to output the progress of the backup. Which backup option should you use?

- A. STATS
- B. COMPRESSION
- C. CHECKSUM
- D. IN IT

**Answer: A**

**NEW QUESTION 8**

- (Exam Topic 1)

You have a database that stores information for a shipping company. You create a table named Customers by running the following Transact-SQL statement.

(Line numbers are included for reference only.)

```

01 CREATE TABLE dbo.Customers (
02     customerId int,
03     customerName varchar(200),
04     salesPerson varchar(20)
05 )
06 CREATE FUNCTION fn_securitypredicateSalesPerson (@salesPerson sysname)
07
08 AS
09 RETURN SELECT 1 AS [fn_securityPredicateOrder_result]
10 FROM dbo.Customers
11 WHERE @salesPerson = user_name()

```

You need to ensure that salespeople can view data only for the customers that are assigned to them. Which Transact-SQL segment should you insert at line 07?

- A. RETURNS varchar(20)WITH Schemabinding
- B. RETURNS dbo.CustomersORDER BY @salesPerson
- C. RETURNS tableORDER BY @salesPerson
- D. RETURNS tableWITH Schemabinding

**Answer: D**

**Explanation:**

The return value can either be a scalar (single) value or a table.

SELECT 1 just selects a 1 for every row, of course. What it's used for in this case is testing whether any rows exist that match the criteria: if a row exists that matches the WHERE clause, then it returns 1, otherwise it returns nothing.

Specify the WITH SCHEMABINDING clause when you are creating the function. This ensures that the objects referenced in the function definition cannot be modified unless the function is also modified.

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

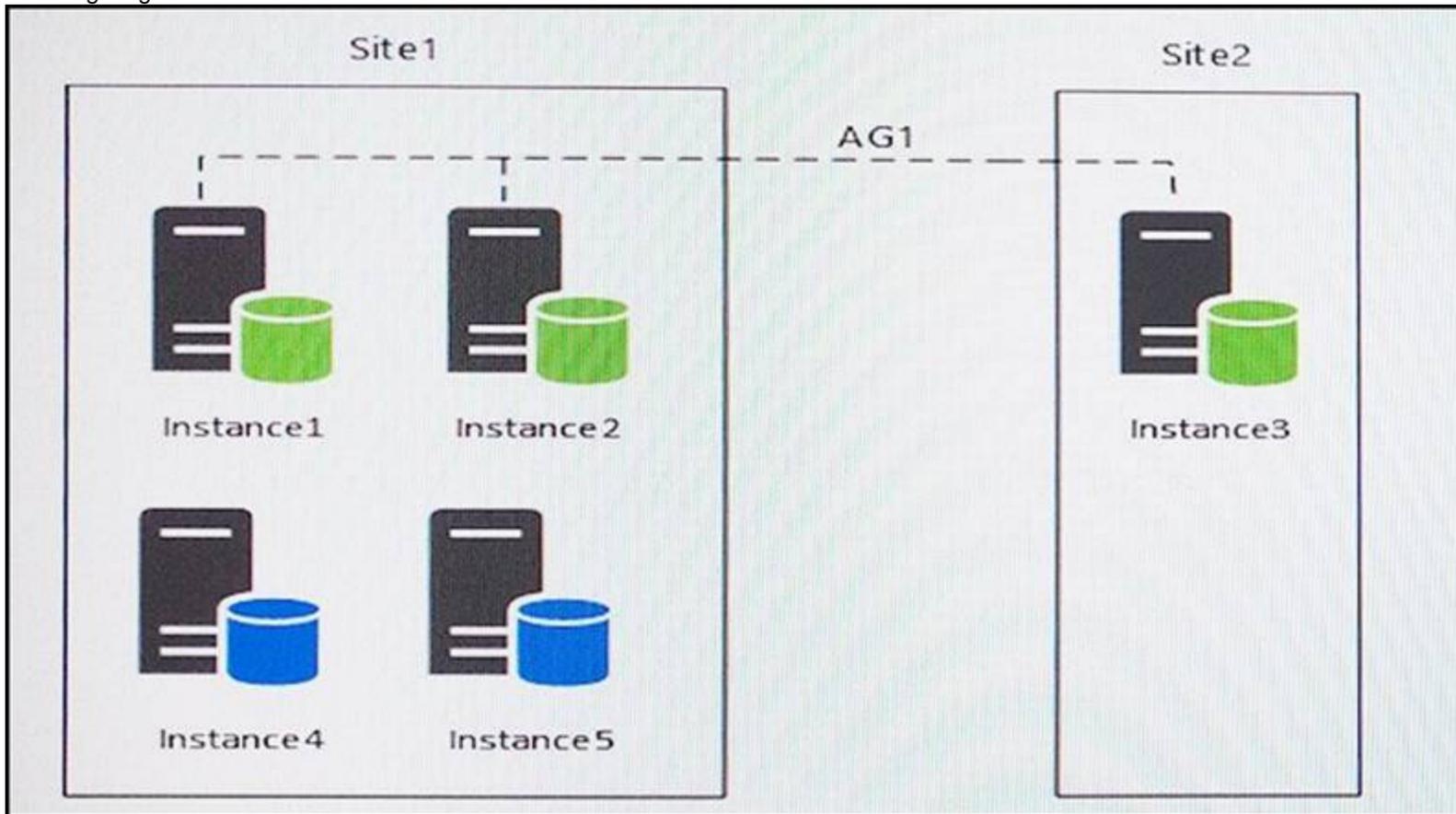
**NEW QUESTION 9**

- (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 have five servers that run Microsoft Windows 2012 R2. Each server hosts a Microsoft SQL Server instance. The topology for the environment is shown in the

following diagram.



You have an Always On Availability group named AG1. The details for AG1 are shown in the following table.

Instance	Node type
Instance1	Primary
Instance2	Synchronous readable secondary
Instance3	Asynchronous readable secondary

Instance1 experiences heavy read-write traffic. The instance hosts a database named OperationsMain that is four terabytes (TB) in size. The database has multiple data files and filegroups. One of the filegroups is read\_only and is half of the total database size.

Instance4 and Instance5 are not part of AG1. Instance4 is engaged in heavy read-write I/O.

Instance5 hosts a database named StagedExternal. A nightly BULK INSERT process loads data into an empty table that has a rowstore clustered index and two nonclustered rowstore indexes.

You must minimize the growth of the StagedExternal database log file during the BULK INSERT operations and perform point-in-time recovery after the BULK INSERT transaction. Changes made must not interrupt the log backup chain.

You plan to add a new instance named Instance6 to a datacenter that is geographically distant from Site1 and Site2. You must minimize latency between the nodes in AG1.

All databases use the full recovery model. All backups are written to the network location \\SQLBackup\. A separate process copies backups to an offsite location. You should minimize both the time required to restore the databases and the space required to store backups. The recovery point objective (RPO) for each instance is shown in the following table.

Instance	Recovery point objective
Instance 1	5 minutes
Instance 2	5 minutes
Instance 3	5 minutes
Instance 4	60 minutes
Instance 5	24 hours

Full backups of OperationsMain take longer than six hours to complete. All SQL Server backups use the keyword COMPRESSION.

You plan to deploy the following solutions to the environment. The solutions will access a database named DB1 that is part of AG1.

Reporting system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader role. The user has EXECUTE permissions on the database. Queries make no changes to the data. The queries must be load balanced over variable read-only replicas.

Operations system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader and db\_datawriter roles. The user has EXECUTE permissions on the database. Queries from the operations system will perform both DDL and DML operations.

The wait statistics monitoring requirements for the instances are described in the following table.

Instance	Description
Instance1	Aggregate wait statistics since the last server restart.
Instance4	Identify the most prominent wait types for all the commands originating from a session, between session connections, or between application pool resets.
Instance5	Identify all the wait types for queries currently running on the server.

You need to propose a new process for the StagedExternal database.

Which five actions should you recommended be performed in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

### Actions

- Drop all nonclustered indexes on the target table.
- Create a transaction log backup. Change the recovery model of **StagedExternal** to **SIMPLE**.
- Run the nightly import process.
- Change the recovery model of **StagedExternal** to **SIMPLE**.
- Change the recovery model of **StagedExternal** to **FULL**. Create a transaction log backup.
- Drop all clustered and nonclustered indexes on the target table.
- Recreate any dropped indexes on the target table.
- Create a transaction log backup. Change the recovery model of **StagedExternal** to **BULK\_LOGGED**.

### Answer Area



- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

From scenario: Instance5 hosts a database named StagedExternal. A nightly BULK INSERT process loads data into an empty table that has a rowstore clustered index and two nonclustered rowstore indexes. You must minimize the growth of the StagedExternaldatabase log file during the BULK INSERT operations and perform point-in-time recovery after the BULK INSERT transaction. Changes made must not interrupt the log backup chain. All databases use the full recovery model. References: [https://technet.microsoft.com/en-us/library/ms190421\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/ms190421(v=sql.105).aspx)

**NEW QUESTION 10**

- (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.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 10**

- (Exam Topic 1)

You are creating an application that will connect to the AgentPortal database by using a SQL login named AgentPortalUser. Stored procedures in the database will use sp\_send\_dbmail to send email messages. You create a user account in the msdb database for the AgentPortalUser login.

You use the Database Mail Configuration Wizard to create a Database Mail profile. Security has not been configured for the Database Mail profile. You need to ensure that AgentPortalUser can send email messages. What should you do?

- A. In the Database Mail Configuration Wizard, configure the Database Mail profile as a private profile for the AgentPortalUser account.
- B. Disable the guest user in the msdb database.
- C. Use the sysmail\_help\_profileaccount\_sp stored procedure to add accounts to the Database Mail profile.
- D. In the Database Mail Configuration Wizard, create an email account for each recipient's email address in the Database Mail profile.

**Answer:** A

**Explanation:**

You enable and configure Database Mail using the Database Mail Configuration Wizard. Profiles are either public or private. A private profile is accessible only to specific users or roles.

References: <https://docs.microsoft.com/en-us/sql/relational-databases/database-mail/configure-database-mail>

**NEW QUESTION 13**

- (Exam Topic 1)

You plan to install a Microsoft SQL Server 2016 instance.

The instance will support a database that has the following requirements:

- Store Excel workbooks on the file system.
  - Access the workbooks through Transact-SQL.
  - Include the workbooks in database backups.
  - During installation, you need to ensure that the requirements will be met.
- Which feature should you use?

- A. Excel Services
- B. FILESTREAM
- C. SQL Server Integration Services (SSIS)
- D. OpenXML

**Answer:** B

**NEW QUESTION 18**

- (Exam Topic 1)

You plan to install Microsoft SQL Server 2016 for a web hosting company.

The company plans to host multiple web sites, each supported by a SQL Server database.

You need to select an edition of SQL Server that features backup compression of databases, basic data integration features, and low total cost of ownership.

Which edition should you choose?

- A. Express Edition with Tools
- B. Standard Edition
- C. Web Edition
- D. Express Edition with Advanced Services

**Answer:** B

**Explanation:**

Backup compression is supported on SQL Server 2016 editions: Enterprise, Standard, and Developer. References: <https://docs.microsoft.com/en-us/sql/sql-server/editions-and-components-of-sql-server-2016>

**NEW QUESTION 20**

- (Exam Topic 1)

You have configured Resource Governor with three resource pools.

You have assigned the first resource pool a minimum CPU and memory value of 20%. You have assigned the second resource pool a minimum CPU and memory value of 30%. You want to assign maximum CPU and memory values to the third resource pool.

What is the maximum CPU and memory value you can assign to this resource pool?

- A. 30%
- B. 50%
- C. 70%
- D. 100%

**Answer:** B

**Explanation:**

The maximum resource value assigned to the third pool is 100%; the sum of the minimum resource values assigned to the other pools is 50%.

**NEW QUESTION 25**

- (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 30**

- (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 32**

- (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.

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 Enterprise edition.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** A

**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 34**

- (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 35**

- (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 40

- (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 master 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 master 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.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 45

- (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 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 46

- (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 48

- (Exam Topic 1)

You manage a Microsoft SQL Server environment. You plan to encrypt data when you create backups. You need to configure the encryption options for backups. What should you configure?

- A. a certificate
- B. an MD5 hash
- C. a DES key
- D. an AES 256-bit key

**Answer:** D

**Explanation:**

To encrypt during backup, you must specify an encryption algorithm, and an encryptor to secure the encryption key. The following are the supported encryption options:

Encryption Algorithm: The supported encryption algorithms are: AES 128, AES 192, AES 256, and Triple DES

Encryptor: A certificate or asymmetric Key

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

**NEW QUESTION 53**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database.

You have a SQL Server Agent job instance that runs using the service account. You have a job step within the job that requires elevated privileges.

You need to ensure that the job step can run using a different user account. What should you use?

- A. a schedule
- B. an alert
- C. an operator
- D. a proxy

**Answer:** D

**NEW QUESTION 54**

- (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:

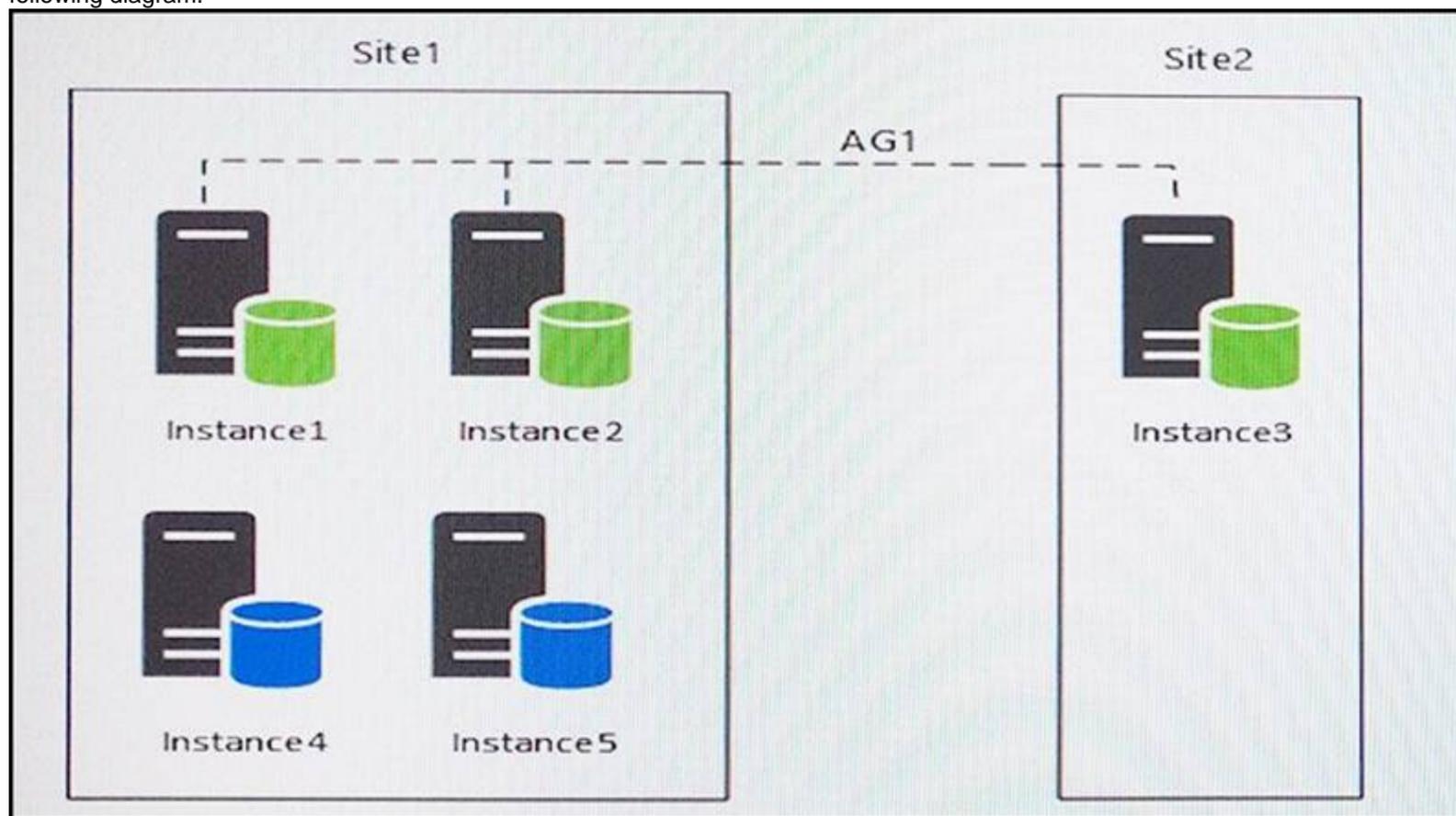
<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/differential-backups-sql-server>

**NEW QUESTION 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 have five servers that run Microsoft Windows 2012 R2. Each server hosts a Microsoft SQL Server instance. The topology for the environment is shown in the following diagram.



You have an Always On Availability group named AG1. The details for AG1 are shown in the following table.

Instance	Node type
Instance1	Primary
Instance2	Synchronous readable secondary
Instance3	Asynchronous readable secondary

Instance1 experiences heavy read-write traffic. The instance hosts a database named OperationsMain that is four terabytes (TB) in size. The database has multiple data files and filegroups. One of the filegroups is read\_only and is half of the total database size.

Instance4 and Instance5 are not part of AG1. Instance4 is engaged in heavy read-write I/O.

Instance5 hosts a database named StagedExternal. A nightly BULK INSERT process loads data into an empty table that has a rowstore clustered index and two nonclustered rowstore indexes.

You must minimize the growth of the StagedExternal database log file during the BULK INSERT operations and perform point-in-time recovery after the BULK INSERT transaction. Changes made must not interrupt the log backup chain.

You plan to add a new instance named Instance6 to a datacenter that is geographically distant from Site1 and Site2. You must minimize latency between the nodes in AG1.

All databases use the full recovery model. All backups are written to the network location \\SQLBackup\. A separate process copies backups to an offsite location.

You should minimize both the time required to restore

the databases and the space required to store backups. The recovery point objective (RPO) for each instance is shown in the following table.

Instance	Recovery point objective
Instance 1	5 minutes
Instance 2	5 minutes
Instance 3	5 minutes
Instance 4	60 minutes
Instance 5	24 hours

Full backups of OperationsMain take longer than six hours to complete. All SQL Server backups use the keyword COMPRESSION.

You plan to deploy the following solutions to the environment. The solutions will access a database named DB1 that is part of AG1.

Reporting system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader role. The user has EXECUTE permissions on the database. Queries make no changes to the data. The queries must be load balanced over variable read-only replicas.

Operations system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader and db\_datawriter roles. The user has EXECUTE permissions on the database. Queries from the operations system will perform both DDL and DML operations.

The wait statistics monitoring requirements for the instances are described in the following table.

Instance	Description
Instance1	Aggregate wait statistics since the last server restart.
Instance4	Identify the most prominent wait types for all the commands originating from a session, between session connections, or between application pool resets.
Instance5	Identify all the wait types for queries currently running on the server.

You need to create a backup plan for Instance4. Which backup plan should you create?

- A. Weekly full backups, nightly differentia
- B. No transaction log backups are necessary.
- C. Weekly full backups, nightly differential backups, transaction log backups every 5 minutes.
- D. Weekly full backups, nightly differential backups, transaction log backups every 12 hours.
- E. Full backups every 60 minutes, transaction log backups every 30 minutes.

**Answer: B**

**Explanation:**

From scenario: Instance4 and Instance5 are not part of AG1. Instance4 is engaged in heavy read-write I/O. The recovery point objective of Instance4 is 60 minutes. RecoveryPoint Objectives are commonly described as the amount of data that was lost during the outage and recovery period. You should minimize both the time required to restore the databases and the space required to store backups.

References:

<http://sqlmag.com/blog/sql-server-recovery-time-objectives-and-recovery-point-objectives>

**NEW QUESTION 60**

- (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.

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 63**

- (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 64**

- (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 69**

- (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 71

- (Exam Topic 1)

You manage a Microsoft SQL Server instance. You have a user named User1.

You need to grant the minimum permissions necessary to allow User1 to review audit logs.

For each action, which option should you use? To answer, select the appropriate options in the answer area.

## Answer Area

Actions	Options
User1 server role assignment	<div style="border: 1px solid gray; padding: 5px;"> <div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> <span></span> <span>▼</span> </div> <div style="padding: 2px;"> <p>diskadmin</p> <p>serveradmin</p> <p>securityadmin</p> <p>setupadmin</p> </div> </div>
Transact-SQL syntax	<div style="border: 1px solid gray; padding: 5px;"> <div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> <span></span> <span>▼</span> </div> <div style="padding: 2px;"> <p>sys.server_file_audits</p> <p>sys.server_audit_specifications</p> <p>sys.server_file_permissions</p> <p>sys.server_principals</p> </div> </div>

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: securityadmin

To access log files for instances of SQL Server that are online, this requires membership in the securityadmin fixed server role.

Box 2: sys.server\_audit\_specifications

sys.server\_audit\_specifications contains information about the server audit specifications in a SQL Server audit on a server instance.

**NEW QUESTION 73**

- (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 74**

- (Exam Topic 1)

You plan to integrate an on-premises Microsoft SQL Server environment with Microsoft Azure. You need to create the authentication object so that you can connect to Azure.

Which Windows PowerShell command or commands should you run?

- A. Invoke-Sqlcmd "CREATE EXTERNAL DATA SOURCE MyAzureStorage WITH (LOCATION = 'wasbs://Azure@myaccount.blob.core.windows.net/', CREDENTIAL = Pa\$\$w0rd)"
- B. New-SqlAzureKeyVaultColumnMasterKeySettings-KeyUrihttps://myvault.vault.contoso.net:443/keys/C
- C. Invoke-Sqlcmd "CREATE CREDENTIAL AzureCred WITH IDENTITY = 'AzureKey', SECRET = 'Pa\$\$w0rd'"
- D. Invoke-Sqlcmd "CREATE LOGIN AzureCred WITH CREDENTIAL = 'AzureKey', PASSWORD = 'Pa\$\$w0rd'"

**Answer:** C

**Explanation:**

Invoke-Sqlcmd runs a script containing statements supported by the SQL Server SQLCMD utility.

The following example creates a SQL Server credential for the Database Engine to use when accessing the Azure Key Vault using the SQL Server Connector for Microsoft Azure Key Vault.

```
CREATE CREDENTIAL Azure_EKM_TDE_cred WITH IDENTITY = 'ContosoKeyVault',  
SECRET = 'EF5C8E094D2A4A769998D93440D8115DSECRET_DBEngine'  
FOR CRYPTOGRAPHIC PROVIDER AzureKeyVault_EKM_Prov ;
```

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

**NEW QUESTION 75**

- (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 80**

- (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:**

You 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 83**

- (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 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 implement a process for importing data into WingDB.

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

### Actions

- Perform a full backup of the database, and enable the bulk-logged recovery model.
- Back up the tail of the transaction log.
- Drop any clustered indexes from the tables being imported into.
- Perform a full backup of the database and enable the simple recovery model.
- Import the data.
- Rebuild any indexes on the tables being imported into.
- Drop any nonclustered indexes from the tables being imported into.

### Answer Area



- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Step 1: Perform a full backup of the database and enable the bulk-logged recovery model. Not: Simple recovery model.

With the Simple recovery model we cannot minimize data loss. Step 2: Import the data

Step 3: Backup the tail of the transaction log.

For databases that use full and bulk-logged recovery, database backups are necessary but not sufficient. Transaction log backups are also required.

Note: Three recovery models exist: simple, full, and bulk-logged. Typically, a database uses the full recovery model or simple recovery model. A database can be switched to another recovery model at any time.

References:

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

**NEW QUESTION 87**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 instance that has several SQL Server Agent jobs configured. SQL Server Agent jobs fail, the error messages returned by the job steps are truncated.

The following error message is an example of the truncated error message:

"Executed as user CONTOSO\ServiceAccount. ...0.4035.00 for 64-bit Copyright (C) Microsoft Corp 1984-2011. All rights reserved. Started 63513 PM Error 2012-06-23 183536.87 Code 0XC001000E Source UserImport Description Code 0x00000000 Source Log Import Activity Descript... The package execution fa... The step failed."

You need to ensure that all the details of the job step failures are retained for SQL Server Agent jobs. What should you do?

- A. Expand agent logging to include information from all events.
- B. Disable the Limit size of job history log feature.
- C. Configure event forwarding.
- D. Configure output files.

**Answer:** D

**Explanation:**

When you have a multiple-step job, then log all steps against a single file. Check the 'Append output to existing file' checkbox for all steps in the job that execute after the initial step. This results in a log file with all of the job steps from the last job execution. Each time the first step executes (each time the job is kicked-off) the file will be overwritten, so we have a record of the last set of output.

References: <https://www.mssqltips.com/sqlservertip/1411/verbose-sql-server-agent-logging/>

**NEW QUESTION 88**

- (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.

One instance hosts a user database named HRDB. The database contains sensitive human resources data. You need to grant an auditor permission to view the

SQL Server audit logs 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 Server State
- G. View Definition
- H. sysadmin

**Answer: F**

**Explanation:**

Unless otherwise specified, viewing catalog views requires a principal to have one of the following:  
 Membership in the sysadmin fixed server role.  
 The CONTROL SERVER permission.  
 The VIEW SERVER STATE permission.  
 The ALTER ANY AUDIT permission.  
 The VIEW AUDIT STATE permission (gives only the principal access to the sys.server\_audits catalog view).  
 References: [https://technet.microsoft.com/en-us/library/cc280386\(v=sql.110\).aspx](https://technet.microsoft.com/en-us/library/cc280386(v=sql.110).aspx)

**NEW QUESTION 93**

- (Exam Topic 1)

You create an availability group named HaContoso that has replicas named Server01/HA, Server02/HA, and Server03/HA. Currently, Server01/HA is the primary replica.  
 You need to ensure that the following requirements are met:  
 Backup operations occur on Server02/HA.  
 If Server02/HA is unavailable, backup operations occur on Server03/HA.  
 Backup operations do not occur on Server01/HA.  
 How should you configure HaContoso?

- A. Set the backup preference of HaContoso to Prefer Secondary
- B. Set the backup priority of Server02/HA to 20. Set the backup priority of Server03/HA to 10.
- C. Set the backup preference of HaContoso to Secondary onl
- D. Set the backup priority of Server02/HA to 20. Set the backup priority of Server03/HA to 10.
- E. Set the backup preference of HaContoso to Secondary onl
- F. Set the backup priority of Server02/HA to 10. Set the backup priority of Server03/HA to 20.
- G. set the exclude replica of Server01/HA to tru
- H. Set the backup priority of Server02/HA to 10. Set the backup priority of Server03/HA to 20.

**Answer: B**

**Explanation:**

Secondary only: Specifies that backups should never be performed on the primary replica. If the primary replica is the only replica online, the backup should not occur.  
 Backup Priority (Lowest=1, Highest=100)  
 Specifies your priority for performing backups on this replica relative to the other replicas in the same availability group. The value is an integer in the range of 0..100. 1 indicates the lowest priority, and 100 indicates the highest priority. If Backup Priority = 1, the availability replica would be chosen for performing backups only if no higher priority availability replicas are currently available.  
 References:  
<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/configure-backup-on-availab>

**NEW QUESTION 97**

- (Exam Topic 1)

You administer two instances of Microsoft SQL Server 2016.  
 You deploy an application that uses a database on the named instance.  
 The application is unable to connect to the database on the named instance. You need to ensure that the application can connect to the named instance. What should you do?

- A. Use the Data Quality Client to configure the application.
- B. Start the SQL Server Browser Service.
- C. Use the Master Data Services Configuration Manager to configure the application.
- D. Start the SQL Server Integration Services Service.

**Answer: B**

**Explanation:**

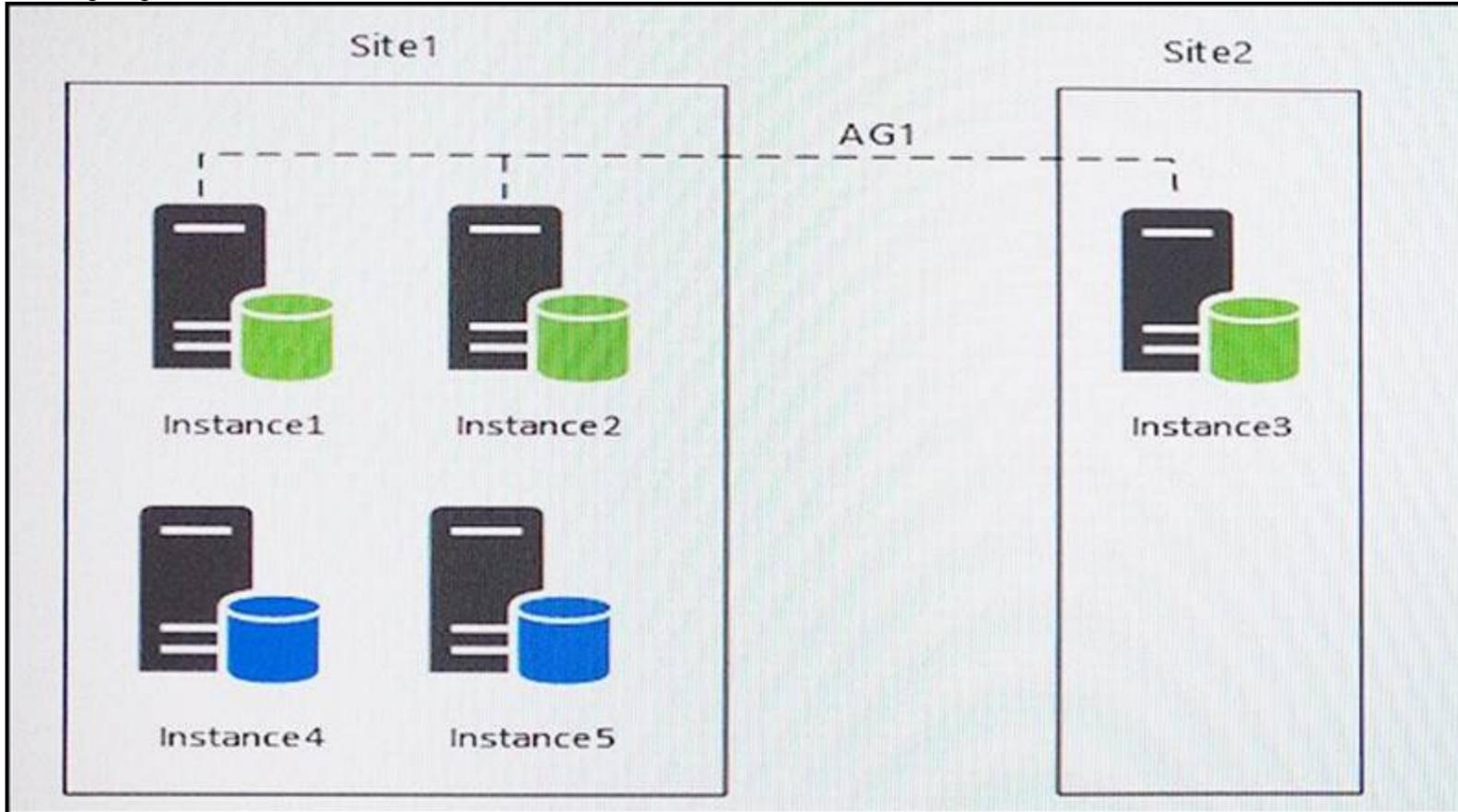
The SQL ServerBrowser program runs as a Windows service. SQL Server Browser listens for incoming requests for Microsoft SQL Server resources and provides information about SQL Server instances installed on the computer. SQL Server Browser contributes to the following actions:  
 Browsing a list of available servers  
 Connecting to the correct server instance  
 Etc.  
 References: <https://docs.microsoft.com/en-us/sql/tools/configuration-manager/sql-server-browser-service>

**NEW QUESTION 101**

- (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 have five servers that run Microsoft Windows 2012 R2. Each server hosts a Microsoft SQL Server instance. The topology for the environment is shown in the

following diagram.



You have an Always On Availability group named AG1. The details for AG1 are shown in the following table.

Instance	Node type
Instance1	Primary
Instance2	Synchronous readable secondary
Instance3	Asynchronous readable secondary

Instance1 experiences heavy read-write traffic. The instance hosts a database named OperationsMain that is four terabytes (TB) in size. The database has multiple data files and filegroups. One of the filegroups is read\_only and is half of the total database size.

Instance4 and Instance5 are not part of AG1. Instance4 is engaged in heavy read-write I/O.

Instance5 hosts a database named StagedExternal. A nightly BULK INSERT process loads data into an empty table that has a rowstore clustered index and two nonclustered rowstore indexes.

You must minimize the growth of the StagedExternal database log file during the BULK INSERT operations and perform point-in-time recovery after the BULK INSERT transaction. Changes made must not interrupt the log backup chain.

You plan to add a new instance named Instance6 to a datacenter that is geographically distant from Site1 and Site2. You must minimize latency between the nodes in AG1.

All databases use the full recovery model. All backups are written to the network location \\SQLBackup\. A separate process copies backups to an offsite location. You should minimize both the time required to restore the databases and the space required to store backups. The recovery point objective (RPO) for each instance is shown in the following table.

Instance	Recovery point objective
Instance 1	5 minutes
Instance 2	5 minutes
Instance 3	5 minutes
Instance 4	60 minutes
Instance 5	24 hours

Full backups of OperationsMain take longer than six hours to complete. All SQL Server backups use the keyword COMPRESSION.

You plan to deploy the following solutions to the environment. The solutions will access a database named DB1 that is part of AG1.

Reporting system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader role. The user has EXECUTE permissions on the database. Queries make no changes to the data. The queries must be load balanced over variable read-only replicas.

Operations system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader and db\_datawriter roles. The user has EXECUTE permissions on the database. Queries from the operations system will perform both DDL and DML operations.

The wait statistics monitoring requirements for the instances are described in the following table.

Instance	Description
Instance1	Aggregate wait statistics since the last server restart.
Instance4	Identify the most prominent wait types for all the commands originating from a session, between session connections, or between application pool resets.
Instance5	Identify all the wait types for queries currently running on the server.

You need to create the connection strings for the operations and reporting systems.

In the table below, identify the option that must be specified in each connection string. NOTE: Make only one selection in each column.

## Answer Area

Option	Reporting system	Operations system
Connect to a Listener using ApplicationIntent=ReadOnly.	<input type="radio"/>	<input type="radio"/>
Connect to the current primary replica SQL instance using ApplicationIntent=ReadOnly.	<input type="radio"/>	<input type="radio"/>
Connect to any current read-only replica SQL instance.	<input type="radio"/>	<input type="radio"/>
Connect to a Listener.	<input type="radio"/>	<input type="radio"/>
Connect to the current primary replica SQL instance.	<input type="radio"/>	<input type="radio"/>

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Reporting system: Connect to any current read-only replica instance

We configure Read-OnlyAccess on an Availability Replica. We select Read-intent only. Only read-only connections are allowed to secondary databases of this replica. The secondary database(s) are all available for read access.

From Scenario: Reporting system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader role. The user has EXECUTE permissions on the database. Queries make no changes to the data. The queries must be load balanced over variable read-only replicas.

Operating system: Connect to the current primary replica SQL instance

By default, both read-write and read-intent access are allowed to the primary replica and no connections are allowed to secondary replicas of an Always On availability group.

From scenario: Operations system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db\_datareader and db\_datawriter roles. The user has EXECUTE permissions on the database. Queries from the operations system will perform both DDL and DML operations.

References:

<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/configure-read-only-access-o>

**NEW QUESTION 103**

- (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 Database Engine instance.

You need to return information about processes that are not idle, that belong to a specific user, or that belong to a specific session.

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:** B

**Explanation:**

Use sp\_who3 to first view the current system load and to identify a session of interest. You should execute the query several times to identify which session id is most consuming teh system resources.

Parameters

sp\_who3 null - who is active;

sp\_who3 1 or 'memory' - who is consuming the memory;

sp\_who3 2 or 'cpu' - who has cached plans that consumed the most cumulative CPU (top 10); sp\_who3 3 or 'count' - who is connected and how many sessions it has;

sp\_who3 4 or 'idle' - who is idle that has open transactions;

sp\_who3 5 or 'tempdb' - who is running tasks that use tempdb (top 5); and, sp\_who3 6 or 'block' - who is blocking.

**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 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 109**

- (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 110**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database.

The database is currently configured to log ship to a secondary server.

You are preparing to cut over to the secondary server by stopping log-shipping and bringing the secondary database online.

You want to perform a tail-log backup. You need to leave the primary database in a restoring state. Which option of the BACKUP LOG command should you use?

- A. NO\_TRUNCATE
- B. NORECOVERY
- C. STANDBY
- D. FORMAT

**Answer:** B

**NEW QUESTION 114**

- (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 configure log shipping to backup and restore by using shared folder.

Does this meet the goal?

- A. Yes
- B. No

**Answer:** B

**NEW QUESTION 119**

- (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 120**

- (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.

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 reorganize 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 123**

- (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 124**

- (Exam Topic 1)

A Microsoft SQL Server database named DB1 has two filegroups named FG1 and FG2. You implement a backup strategy that creates backups for the filegroups.

DB1 experiences a failure. You must restore FG1 and then FG2.

You need to ensure that the database remains in the RECOVERING state until the restoration of FG2 completes. After the restoration of FG2 completes, the database must be online.

What should you specify when you run the recovery command?

- A. the WITH NORECOVERY clause for FG1 and the WITH RECOVERY clause for FG2
- B. the WITH RECOVERY clause for FG1 and the WITH RECOVERY clause for FG2
- C. the WITH RECOVERY clause for both FG1 and FG2
- D. the WITH NORECOVERY clause for both FG1 and FG2

**Answer:** A

### NEW QUESTION 127

- (Exam Topic 1)

You administer several Microsoft SQL Server 2016 database servers.

Merge replication has been configured for an application that is distributed across offices throughout a wide area network (WAN). Many of the tables involved in replication use the XML and varchar (max) data types.

Occasionally, merge replication fails due to timeout errors. You need to reduce the occurrence of these timeout errors. What should you do?

- A. Set the Merge agent on the problem subscribers to use the slow link agent profile.
- B. Create a snapshot publication, and reconfigure the problem subscribers to use the snapshot publication.
- C. Change the Merge agent on the problem subscribers to run continuously.
- D. Set the Remote Connection Timeout on the Publisher to 0.

**Answer:** A

#### Explanation:

You might have different profiles for different instances of an agent. For example, a Merge Agent that connects to the Publisher and Distributor over a dialup connection could use a set of parameters that are better suited to the slower communications link by using the slow link profile.

Note: When replication is configured, a set of agent profiles is installed on the Distributor. An agent profile contains a set of parameters that are used each time an agent runs: each agent logs in to the Distributor during its startup process and queries for the parameters in its profile.

References:

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

### NEW QUESTION 128

- (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 132

- (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 134**

- (Exam Topic 2)

You use SQL Server 2014 Enterprise Edition.

Your database contains a partitioned table named AuditData. AuditData is partitioned by year. Partition 1 contains data from the year 2010 and prior. Management has decided to archive all AUDITDATA records from 2010 and prior.

Management wants the records to be removed from the database entirely and provided to the backup team as a zipped text file. The data must no longer reside in the database.

There is very little tolerance for performance degradation in your environment. You need to remove all 2010 and prior data from the AuditData table by using the least amount of system resources possible. Develop the solution by selecting and arranging the required SQL actions in the correct order.

You may not need all of the actions.

SQL Actions	Answer Area
Drop Table	
Select Into	
Switch Partition	
Move Partition	
Merge Range	
BCP	
Split Range	
Create Table	
Delete Partition	
Drop Partition	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Note:

- Create a new partitioned table with the partition function you want, and then insert the data from the old table into the new table by using an INSERT INTO...SELECT FROM statement.

- SPLIT RANGE ( boundary\_value )

Adds one partition to the partition function. boundary\_value determines the range of the new partition, and must differ from the existing boundary ranges of the partition function. Based on boundary\_value, the Database Engine splits one of the existing ranges into two.

Of these two, the one where the new boundary\_value resides is considered the new partition.

- BCP can be used to produce the zipped text file.

- Example: splitting a partition of a partitioned table or index into two partitions

The following example creates a partition function to partition a table or index into four partitions. ALTER PARTITION FUNCTION splits one of the partitions into two to create a total of five partitions. CREATE PARTITION FUNCTION myRangePF1 (int)

AS RANGE LEFT FOR VALUES ( 1, 100, 1000 ); GO

-Split the partition between boundary\_values 100 and 1000

-to create two partitions between boundary\_values 100 and 500

--and between boundary\_values 500 and 1000. ALTER PARTITION FUNCTION myRangePF1 () SPLIT RANGE (500);

**NEW QUESTION 136**

- (Exam Topic 2)

You are migrating a database named Orders to a new server that runs Microsoft SQL Server 2016. You attempt to add the [Corpnet\User1] login to the database. However, you receive the following error message: "User already exists in current database."

You need to configure the [Corpnet\User1] login to be able to access the Orders database and retain the original permissions.

You need to achieve this goal by using the minimum required permissions. Which Transact-SQL statement should you use?

- A. DROP USER [User1]; CREATE USER [Corpnet\User1] FOR LOGIN [Corpnet\User1]; ALTER ROLE [db\_owner] ADD MEMBER [Corpnet\User1];
- B. ALTER SERVER RCL [sysadmin] ADD MEMBER [Corpnet\User1];
- C. ALTER USER [Corpnet\User1] WITH LOGIN [Corpnet\User1];
- D. ALTER ROLE [db\_owner] ADD MEMBER [Corpnet\User1];

**Answer:** C

**NEW QUESTION 141**

- (Exam Topic 2)

You plan to deploy SQL Server 2014.

You identify the following security requirements for the deployment:

Users must be prevented from intercepting and reading the T-SQL statements sent from the clients to the database engine.

All database files and log files must be encrypted if the files are moved to another disk on another server.

You need to identify which feature meets each security requirement. The solution must minimize processor overhead.

Which features should you identify? To answer, drag the appropriate feature to the correct requirement in the answer area.

Features	Answer Area
Encrypting File System (EFS)	Users must be prevented from intercepting and reading the T-SQL statements sent from the clients to the database engine. <input type="text" value="Feature"/>
Policy-Based Management	
Secure Socket Layer (SSL)	
Transparent Data Encryption (TDE)	All database files and log files must be encrypted if the files are moved to another disk on another server. <input type="text" value="Feature"/>
Windows BitLocker Drive Encryption (BitLocker)	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

- Secure Sockets Layer (SSL) encryption enables transmitting encrypted data across the network between an instance of SQL Server and a client application.
- Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the data and log files.

**NEW QUESTION 146**

- (Exam Topic 2)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

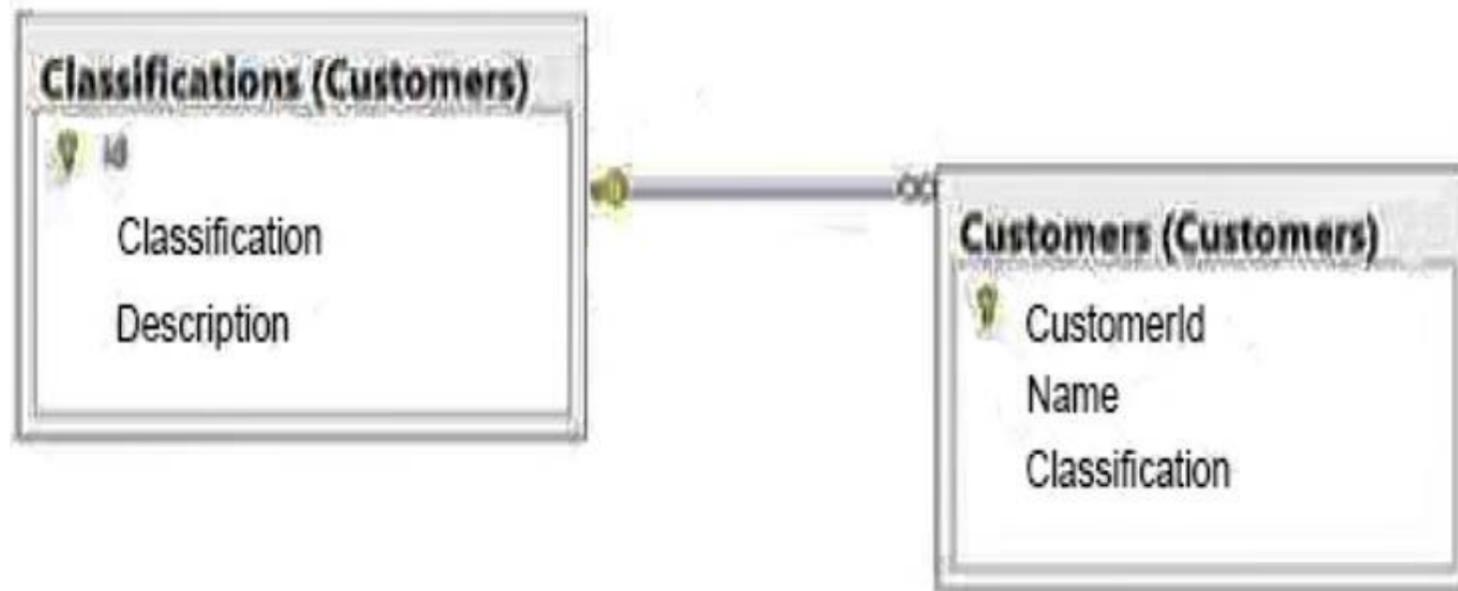
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

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

A Datum 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 continues to execute even if one of the UPDATE statements fails.

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:** A

**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 OFF, in some cases only the Transact-SQL statement that raised the error is rolled back and the transaction continues processing.

## NEW QUESTION 149

- (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 solution for the deployment of SQL Server 2014. The solution must meet the business requirements. What should you include in the recommendation?

- A. Create a new instance of SQL Server 2014 on the server that hosts the SQL Server 2008 instance.
- B. Upgrade the existing SQL Server 2008 instance to SQL Server 2014.
- C. Deploy two servers that have SQL Server 2014 installed and implement Failover Clustering.
- D. Deploy two servers that have SQL Server 2014 installed and implement database mirroring.

**Answer:** C

**Explanation:**

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

**NEW QUESTION 154**

- (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 156

- (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. What should you recommend for the updates to Sales.TransactionHistory?

- A. a REPEATABLE READ isolation level
- B. implicit transactions
- C. query hints
- D. a SNAPSHOT isolation level

**Answer: A**

**NEW QUESTION 161**

- (Exam Topic 2)

**Overview**

**General Overview**

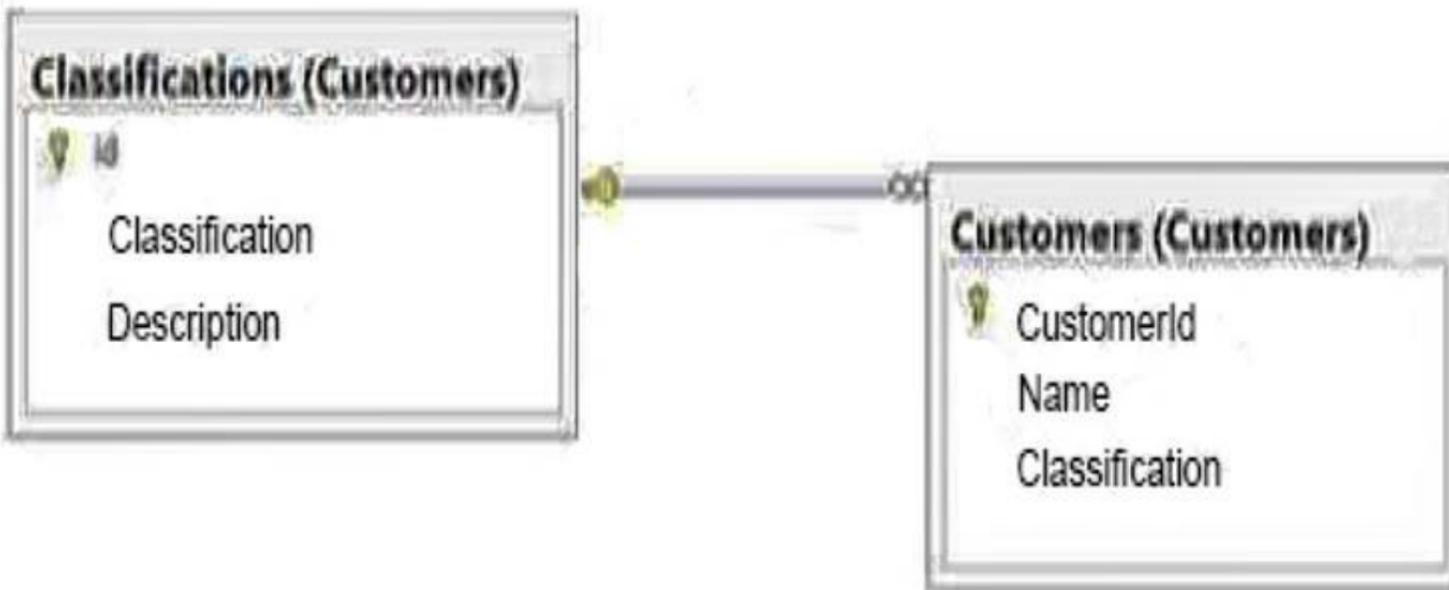
ADatum Corporation has offices in Miami and Montreal.

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  
 A Datum 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 164**

- (Exam Topic 2)

You deploy a database by using SQL Server 2014. The database contains a table named Table1.  
 You need to recommend a solution to track all of the deletions executed on Table1. The solution must minimize the amount of custom code required.  
 What should you recommend?

- A. Change data capture
- B. Statistics
- C. A trigger
- D. Master Data Services

**Answer:** A

**Explanation:**

Change data capture is designed to capture insert, update, and delete activity applied to SQL Server tables, and to make the details of the changes available in an easily consumed relational format. The change tables used by change data capture contain columns that mirror the column structure of a tracked source table, along with the metadata needed to understand the changes that have occurred.

**NEW QUESTION 165**

- (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 168

- (Exam Topic 2)

You are troubleshooting an application that runs a query. The application frequently causes deadlocks. You need to identify which transaction causes the deadlock.

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

- A. Query the sys.dm\_exec\_requests dynamic management view.
- B. Create a trace in SQL Server Profiler that contains the Deadlock graph event.
- C. Query the sys.dm\_exec\_sessions dynamic management view.
- D. Create an extended events session to capture deadlock information.

**Answer:** D

#### Explanation:

Troubleshooting deadlocks

You have been receiving reports from users indicating that certain applications are returning deadlock errors. To maximize the effectiveness of troubleshooting these problems, you decide to focus on the deadlocks that are hit most frequently. You create an Extended Events session that:

Configures deadlock event tracking for the session.

Specifies a target that aggregates based on an identifier for the deadlock.

You run the Extended Events session, and after additional deadlocks are reported you are able to obtain aggregated deadlock information, along with the complete XML deadlock graph for each source. Using this information, you are able to pin point the most common deadlocks and start working on a solution.

#### NEW QUESTION 170

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 server.

The MSSQLSERVER service uses a domain account named CONTOSO\SQLService. You plan to configure Instant File Initialization.

You need to ensure that Data File Autogrow operations use Instant File Initialization. What should you do? Choose all that apply.

- A. Restart the SQL Server Agent Service.
- B. Disable snapshot isolation.
- C. Restart the SQL Server Service.
- D. Add the CONTOSO\SQLService account to the Perform Volume Maintenance Tasks local security policy.
- E. Add the CONTOSO\SQLService account to the Server Operators fixed server role.
- F. Enable snapshot isolation.

**Answer:** CD

#### Explanation:

How To Enable Instant File Initialization

Open Local Security Policy and go to Local Policies → User Rights Assignment.

Double click Perform Volume Maintenance Tasks and add your SQL Server database engine service account.

Restart the SQL Server service using SQL Server Configuration Manager and this setting should now be enabled.

References:

<http://msdn.microsoft.com/en-us/library/ms175935.aspx>

#### NEW QUESTION 171

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 server.

One of the databases on the server supports a highly active OLTP application. Users report abnormally long wait times when they submit data into the application.

You need to identify which queries are taking longer than 1 second to run over an extended period of time. What should you do?

- A. use SQL Profiler to trace all queries that are processing on the server.
- B. Filter queries that have a Duration value of more than 1,000.
- C. Use sp\_configure to set a value for blocked process threshold.
- D. Create an extended event session.
- E. Use the Job Activity monitor to review all processes that are actively running.
- F. Review the Job History to find out the duration of each step.
- G. Run the sp\_who command from a query window.
- H. Run the DBCC TRACEON 1222 command from a query window and review the SQL Server event log.

**Answer:** B

#### NEW QUESTION 173

- (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 178

- (Exam Topic 2)

You want to reproduce the same SQL Server 2016 installation configuration across five servers. Which of the following files will you generate by using SQL Server Setup to accomplish this goal?

- A. Configuration.xml
- B. Setup.ini
- C. Setup.xml
- D. ConfigurationFile.ini

**Answer: D**

#### NEW QUESTION 181

- (Exam Topic 2)

You have two SQL Server instances named SQLDev and SQLProd that have access to various storage media. You plan to synchronize SQLDev and SQLProd.

You need to recommend a solution that meets the following requirements:

The database schemas must be synchronized from SQLDev to SQLProd.

The database on SQLDev must be deployed to SQLProd by using a package.

The package must support being deployed to SQL Azure.

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

- A. A database snapshot
- B. A data-tier application
- C. Change data capture
- D. SQL Server Integration Services (SSIS)

**Answer: B**

#### Explanation:

\*SIS supports connections to SQL Database by using the ADO.NET provider. OLEDB is not supported at this time. You can build the SSIS package connecting to SQL Database and create the data flow tasks the same way as you would against a typical on premise SQL Server.

<http://technet.microsoft.com/en-us/library/ee210546.aspx>

#### NEW QUESTION 183

- (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\_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 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 185**

- (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 189**

- (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 191**

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 instance.

You need to stop a blocking process that has an SPID of 64 without stopping other processes. What should you do?

- A. Execute the following Transact-SQL statement: EXECUTE sp\_KillSPID 64
- B. Restart the SQL Server service.
- C. Execute the following Transact-SQL statement: KILL 64
- D. Execute the following Transact-SQL statement: ALTER SESSION KILL '64'

**Answer: C**

#### **Explanation:**

KILL can be used to terminate a normal connection, which internally terminates the transactions that are associated with the specified session ID.

References:

<http://msdn.microsoft.com/en-us/library/ms173730.aspx>

#### **NEW QUESTION 196**

- (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	Work Area
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	

- 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

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 199**

- (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 204**

- (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 206**

- (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 211**

- (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

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 213**

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