

70-765.exam.100q

Number: 70-765
Passing Score: 800
Time Limit: 120 min

70-765

Provisioning SQL Databases

Sections

1. Implementing SQL in Azure
2. Manage databases and instances
3. Deploy and migrate applications

Exam A

QUESTION 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. Determine whether the solution meets stated goals.

You manage a Microsoft SQL Server environment with several databases.

You need to ensure that queries use statistical data and do not initialize values for local variables.

Solution: You enable the PARAMETER_SNIFFING option for the databases.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: Manage databases and instances

Explanation

Explanation/Reference:

PARAMETER_SNIFFING = { ON | OFF | PRIMARY} enables or disables parameter sniffing. This is equivalent to Trace Flag 4136.

SQL server uses a process called parameter sniffing when executing queries or stored procedures that use parameters. During compilation, the value passed into the parameter is evaluated and used to create an execution plan. That value is also stored with the execution plan in the plan cache. Future executions of the plan will re-use the plan that was compiled with that reference value.

References: <https://msdn.microsoft.com/en-us/library/mt629158.aspx>

QUESTION 2

You manage a Microsoft SQL Server environment in a Microsoft Azure virtual machine.

You must enable Always Encrypted for columns in a database.

You need to configure the key store provider.

What should you do?

- A. Manually specify the column master key.
- B. Modify the connection string for applications.
- C. Auto-generate a column master key.
- D. Use the Windows certificate store.

Correct Answer: D

Section: Manage databases and instances

Explanation

Explanation/Reference:

Always Encrypted supports multiple key stores for storing Always Encrypted column master keys. A column master key can be a certificate stored in Windows Certificate Store.

References: <https://msdn.microsoft.com/en-us/library/mt723359.aspx>

QUESTION 3

You plan to deploy 20 Microsoft Azure SQL Database instances to an elastic pool in Azure to support a batch

processing application.

Two of the databases in the pool reach their peak workload threshold at the same time every day. This leads to inconsistent performance for batch completion.

You need to ensure that all batches perform consistently.

What should you do?

- A. Create an In-Memory table.
- B. Increase the storage limit in the pool.
- C. Implement a readable secondary database.
- D. Increase the total number of elastic Database Transaction Units (eDTUs) in the pool.

Correct Answer: D

Section: Manage databases and instances

Explanation

Explanation/Reference:

In SQL Database, the relative measure of a database's ability to handle resource demands is expressed in Database Transaction Units (DTUs) for single databases and elastic DTUs (eDTUs) for databases in an elastic pool.

A pool is given a set number of eDTUs, for a set price. Within the pool, individual databases are given the flexibility to auto-scale within set parameters. Under heavy load, a database can consume more eDTUs to meet demand.

Additional eDTUs can be added to an existing pool with no database downtime.

References: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-elastic-pool>

QUESTION 4

Note: This questions 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 manage on-premises and Microsoft Azure SQL Database instances for a company. Your environment must support the Microsoft SQL Server 2012 ODBS driver.

You need to encrypt only specific columns in the database.

What should you implement?

- A. transport-level encryption
- B. cell-level encryption
- C. Transparent Data Encryption
- D. Always Encrypted
- E. Encrypting File System
- F. BitLocker
- G. dynamic data masking

Correct Answer: D

Section: Manage databases and instances

Explanation

Explanation/Reference:

To encrypt columns you can configure Always Encrypted.

SQL Server Management Studio (SSMS) provides a wizard that helps you easily configure Always Encrypted by setting up the column master key, column encryption key, and encrypted columns for you.

Always Encrypted allows client applications to encrypt sensitive data and never reveal the data or the encryption keys to SQL Server or Azure SQL Database. An Always Encrypted enabled driver, such as the ODBC Driver 13.1 for SQL Server, achieves this by transparently encrypting and decrypting sensitive data in the client application.

Note: The ODBC driver automatically determines which query parameters correspond to sensitive database columns (protected using Always Encrypted), and encrypts the values of those parameters before passing the data to SQL Server or Azure SQL Database. Similarly, the driver transparently decrypts data retrieved from encrypted database columns in query results.

References: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-always-encrypted-azure-key-vault#encrypt-columns-configure-always-encrypted>
[https://msdn.microsoft.com/en-us/library/mt637351\(v=sql.110\).aspx](https://msdn.microsoft.com/en-us/library/mt637351(v=sql.110).aspx)

QUESTION 5

Note: This questions 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.

Your company has several Microsoft Azure SQL Database instances.

Data encryption should be allowed to be implemented by the client applications that access the data. Encryption keys should not be made available to the database engine.

You need to configure the database.

What should you implement?

- A. transport-level encryption
- B. cell-level encryption
- C. Transparent Data Encryption
- D. Always Encrypted
- E. Encrypting File System
- F. BitLocker
- G. dynamic data masking

Correct Answer: A

Section: Manage databases and instances

Explanation

Explanation/Reference:

Using encryption during transit with Azure File Shares

Azure File Storage supports HTTPS when using the REST API, but is more commonly used as an SMB file share attached to a VM.

HTTPS is a transport-level security protocol.

Incorrect Answers:

C: TDE encrypts the storage of an entire database by using a symmetric key called the database encryption key. In SQL Database the database encryption key is protected by a built-in server certificate.

References: <https://docs.microsoft.com/en-us/azure/storage/storage-security-guide#encryption-in-transit>

QUESTION 6

You are deploying a Microsoft SQL Server database that will support a mixed OLTP and OLAP workload. The target virtual machine has four CPUs.

You need to ensure that reports do not use all available system resources.

What should you do?

- A. Increase the default database file auto growth sizes.
- B. Increase the value for the Minimum System Memory setting.
- C. Set MAXDOP to half the number of CPUs available.
- D. Increase the value for the Minimum Memory per query setting.

Correct Answer: C

Section: Manage databases and instances

Explanation

Explanation/Reference:

When an instance of SQL Server runs on a computer that has more than one microprocessor or CPU, it detects the best degree of parallelism, that is, the number of processors employed to run a single statement, for each parallel plan execution. You can use the max degree of parallelism option to limit the number of processors to use in parallel plan execution.

Incorrect Answers:

A: The Auto Close property exposes server behavior for databases not accessed by a user. This feature will be removed in a future version of Microsoft SQL Server. Avoid using this feature in new development work, and plan to modify applications that currently use this feature.

References: <https://msdn.microsoft.com/en-us/library/ms189094.aspx>

QUESTION 7

A company has an on-premises Microsoft SQL Server 2014 environment. The company has a main office in Seattle, and remote offices in Amsterdam and Tokyo. You plan to deploy a Microsoft Azure SQL Database instance to support a new application. You expect to have 100 users from each office.

In the past, users at remote sites reported issues when they used applications hosted at the Seattle office.

You need to optimize performance for users running reports while minimizing costs.

What should you do?

- A. Implement an elastic pool.
- B. Implement a standard database with readable secondaries in Asia and Europe, and then migrate the application.
- C. Implement replication from an on-premises SQL Server database to the Azure SQL Database instance.
- D. Deploy a database from the Premium service tier.

Correct Answer: B

Section: Deploy and migrate applications

Explanation

Explanation/Reference:

References: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-geo-replication-transact-sql#add-secondary-database>

QUESTION 8

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets stated goals.

You have a mission-critical application that stores data in a Microsoft SQL Server instance. The application runs several financial reports. The reports use a SQL Server-authenticated login named Reporting_User. All queries that write data to the database use Windows authentication.

Users report that the queries used to provide data for the financial reports take a long time to complete. The queries consume the majority of CPU and memory resources on the database server. As a result, read-write queries for the application also take a long time to complete.

You need to improve performance of the application while still allowing the report queries to finish.

Solution: You create a snapshot of the database. You configure all report queries to use the database snapshot.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: Deploy and migrate applications

Explanation

Explanation/Reference:

Use a Resource Governor instead.

References: <https://msdn.microsoft.com/en-us/library/bb933866.aspx>

QUESTION 9

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets stated goals.

You have a mission-critical application that stores data in a Microsoft SQL Server instance. The application runs several financial reports. The reports use a SQL Server-authenticated login named Reporting_User. All queries that write data to the database use Windows authentication.

Users report that the queries used to provide data for the financial reports take a long time to complete. The queries consume the majority of CPU and memory resources on the database server. As a result, read-write queries for the application also take a long time to complete.

You need to improve performance of the application while still allowing the report queries to finish.

Solution: You configure the Resource Governor to limit the amount of memory, CPU, and IOPS used for the pool of all queries that the Reporting_user login can run concurrently.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: Deploy and migrate applications

Explanation

Explanation/Reference:

SQL Server Resource Governor is a feature that you can use to manage SQL Server workload and system resource consumption. Resource Governor enables you to specify limits on the amount of CPU, physical IO, and memory that incoming application requests can use.

References: <https://msdn.microsoft.com/en-us/library/bb933866.aspx>

QUESTION 10

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets stated goals.

You have a mission-critical application that stores data in a Microsoft SQL Server instance. The application runs several financial reports. The reports use a SQL Server-authenticated login named Reporting_User. All queries that write data to the database use Windows authentication.

Users report that the queries used to provide data for the financial reports take a long time to complete. The queries consume the majority of CPU and memory resources on the database server. As a result, read-write queries for the application also take a long time to complete.

You need to improve performance of the application while still allowing the report queries to finish.

Solution: You configure the Resource Governor to set the MAXDOP parameter to **0** for all queries against the database.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: Deploy and migrate applications

Explanation

Explanation/Reference:

SQL Server will consider parallel execution plans for queries, index data definition language (DDL) operations, and static and keyset-driven cursor population.

You can override the max degree of parallelism value in queries by specifying the MAXDOP query hint in the query statement.

References: [https://technet.microsoft.com/en-us/library/ms181007\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/ms181007(v=sql.105).aspx)

QUESTION 11

HOTSPOT

Background

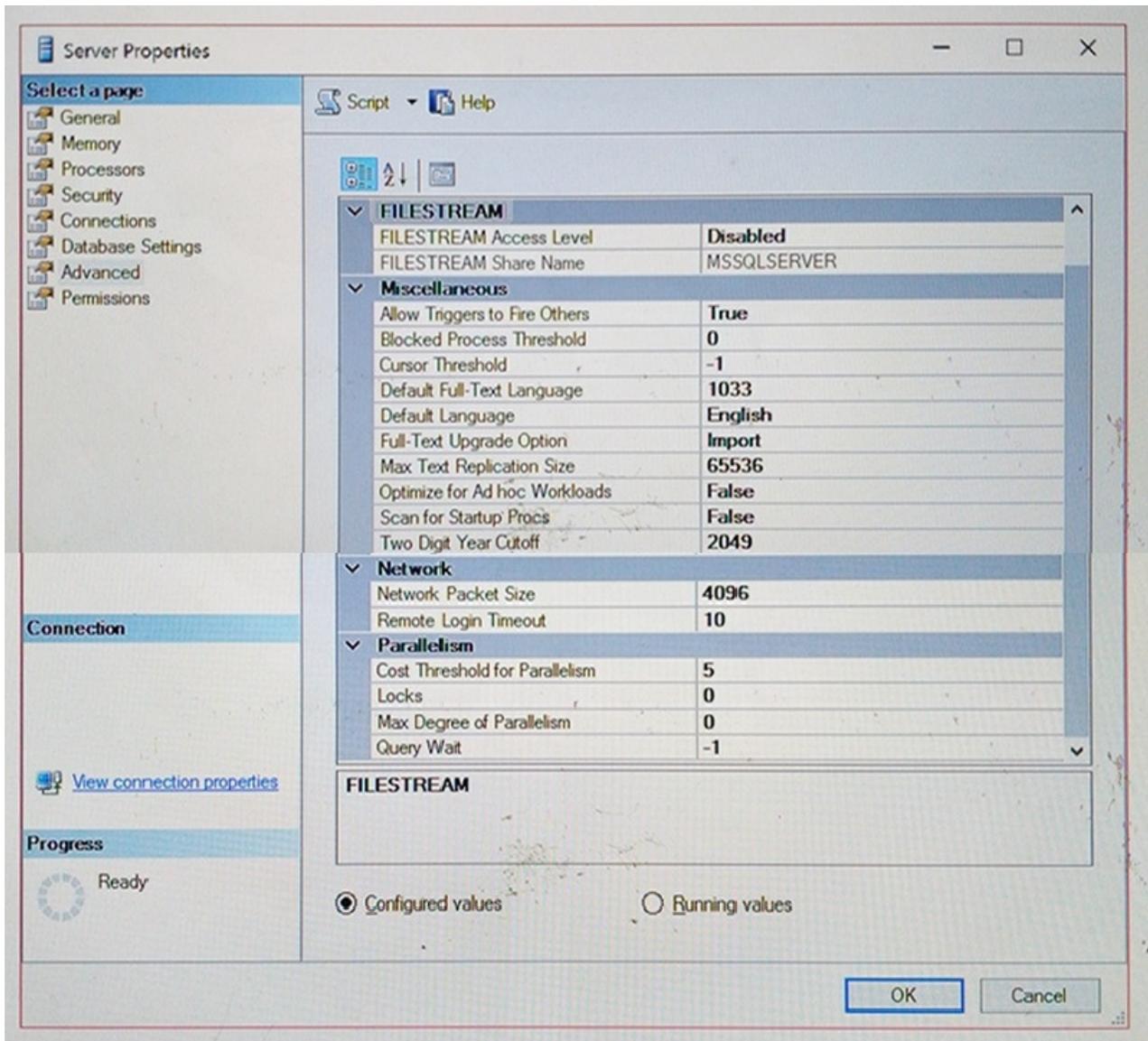
You manage the Microsoft SQL Server environment for a company that manufactures and sells automobile parts.

The environment includes the following servers: SRV1 and SRV2. SRV1 has 16 logical cores and hosts a SQL Server instance that supports a mission-critical application. The application has approximately 30,000 concurrent users and relies heavily on the use of temporary tables.

The environment also includes the following databases: **DB1**, **DB2**, and **Reporting**. The **Reporting** database is protected with Transparent Data Encryption (TDE). You plan to migrate this database to a new server. You detach the database and copy it to the new server.

You are performing tuning on a SQL Server database instance. The application which uses the database was written using an object relationship mapping (ORM) tool which maps tables as objects within the application code. There are 30 stored procedures that are regularly used by the application.

Exhibit



You need to optimize **SRV1**.

What configuration changes should you implement? To answer, select the appropriate option from each list in the answer area.

Hot Area:

Answer Area

How should you modify the tempdb configuration?

- Change the recovery model of tempdb.
- Change the number of tempdb files.
- Change the size of the tempdb log file.
- Change the MAXDOP property.

How should you reconfigure the tempdb database?

- Add additional tempdb files.
- Remove tempdb files.
- Add tempdb log files.
- Remove tempdb log files.
- Set MAXDOP to 8.

Correct Answer:

Answer Area

How should you modify the tempdb configuration?

- Change the recovery model of tempdb.
- Change the number of tempdb files.
- Change the size of the tempdb log file.
- Change the MAXDOP property.

How should you reconfigure the tempdb database?

- Add additional tempdb files.
- Remove tempdb files.
- Add tempdb log files.
- Remove tempdb log files.
- Set MAXDOP to 8.

Section: Deploy and migrate applications

Explanation

Explanation/Reference:

Explanation:

From the scenario: SRV1 has 16 logical cores and hosts a SQL Server instance that supports a mission-critical application. The application has approximately 30,000 concurrent users and relies heavily on the use of temporary tables.

Box 1: Change the size of the tempdb log file.

The size and physical placement of the tempdb database can affect the performance of a system. For example, if the size that is defined for tempdb is too small, part of the system-processing load may be taken up with autogrowing tempdb to the size required to support the workload every time you restart the instance of SQL Server. You can avoid this overhead by increasing the sizes of the tempdb data and log file.

Box 2: Add additional tempdb files.

Create as many files as needed to maximize disk bandwidth. Using multiple files reduces tempdb storage contention and yields significantly better scalability. However, do not create too many files because this can reduce performance and increase management overhead. As a general guideline, create one data file for each CPU on the server (accounting for any affinity mask settings) and then adjust the number of files up or down as necessary.

Incorrect Answers:

Not MAXDOP:

The MAXDOP setting is fine. From the exhibit we see that MAXDOP is set to 0. This is the default setting, which enables the server to determine the maximum degree of parallelism.

Note: When an instance of SQL Server runs on a computer that has more than one microprocessor or CPU, it detects the best degree of parallelism, that is, the number of processors employed to run a single statement, for each parallel plan execution. You can use the max degree of parallelism option to limit the number of processors to use in parallel plan execution.

References: [https://technet.microsoft.com/en-us/library/ms175527\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/ms175527(v=sql.105).aspx)

QUESTION 12

DRAG DROP

Background

You manage a Microsoft SQL Server environment that includes the following databases: **DB1**, **DB2**, **Reporting**.

The environment also includes SQL Reporting Services (SSRS) and SQL Server Analysis Services (SSAS). All SSRS and SSAS servers use named instances. You configure a firewall rule for SSAS.

Databases

Database Name:

DB1

Notes:

This database was migrated from SQL Server 2012 to SQL Server 2016. Thousands of records are inserted into DB1 or updated each second. Inserts are made by many different external applications that your company's developers do not control. You observe that transaction log write latency is a bottleneck in performance. Because of the transient nature of all the data in this database, the business can tolerate some data loss in the event of a server shutdown.

Database Name:

DB2

Notes:

This database was migrated from SQL Server 2012 to SQL Server 2016. Thousands of records are updated or inserted per second. You observe that the WRITELOG wait type is the highest aggregated wait type. Most writes must have no tolerance for data loss in the event of a server shutdown. The business has identified certain write queries where data loss is tolerable in the event of a server shutdown.

Database Name:

Reporting

Notes:

You create a SQL Server-authenticated login named **BIAppUser** on the SQL Server instance to support users of the Reporting database. The **BIAppUser** login is not a member of the **sysadmin** role. You plan to configure performance-monitoring alerts for this instance by using SQL Agent Alerts.

You create a login named **BIAppUser**. The login must be able to access the Reporting database.

You need to grant access to the **BIAppUser** login in the database.

How should you complete the Transact-SQL statements? 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.

Select and Place: