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70-767

Implementing a SQL Data Warehouse



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 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 have a data warehouse that stores information about products, sales, and orders for a manufacturing company. The instance contains a database that has two tables named SalesOrderHeader and SalesOrderDetail. SalesOrderHeader has 500,000 rows and SalesOrderDetail has 3,000,000 rows.

Users report performance degradation when they run the following stored procedure:

```
CREATE PROCEDURE Sales.GetRecentSales (@date datetime)

AS BEGIN

IF @date is NULL

SET @date = DATEADD(MONTH, -3, (SELECT MAX(ORDERDATE) FROM Sales.SalesOrderHeader))

SELECT * FROM Sales.SalesOrderHeader h, Sales.SalesOrderDetail d

WHERE h.SalesOrderID = d.SalesOrderID

AND h.OrderDate > @date

END
```

You need to optimize performance.

Solution: You run the following Transact-SQL statement:

```
CREATE STATISTICS Stat1
On Sales.SalesOrderHeader (OrderDate)
WITH SAMPLE 5 PERCENT
```

Does the solution meet the goal?

https://vceplus.com/

A. Yes



B. No

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:

You can specify the sample size as a percent. A 5% statistics sample size would be helpful.

References: https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-statistics

QUESTION 2

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You have the following line-of-business solutions:

- ERP system
- Online WebStore
- Partner extranet



One or more Microsoft SQL Server instances support each solution. Each solution has its own product catalog. You have an additional server that hosts SQL Server Integration Services (SSIS) and a data warehouse. You populate the data warehouse with data from each of the line-of-business solutions. The data warehouse does not store primary key values from the individual source tables.

The database for each solution has a table named Products that stored product information. The Products table in each database uses a separate and unique key for product records. Each table shares a column named ReferenceNr between the databases. This column is used to create queries that involve more than once solution.

You need to load data from the individual solutions into the data warehouse nightly. The following requirements must be met:

- If a change is made to the ReferenceNr column in any of the sources, set the value of IsDisabled to True and create a new row in the Products table.
- If a row is deleted in any of the sources, set the value of IsDisabled to True in the data warehouse.

Solution: Perform the following actions:

- Enable the Change Tracking for the Product table in the source databases.
- Query the CHANGETABLE function from the sources for the updated rows.
- Set the IsDisabled column to True for the listed rows that have the old ReferenceNr value.
- Create a new row in the data warehouse Products table with the new ReferenceNr value.



Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

We must check for deleted rows, not just updates rows.

References: https://www.timmitchell.net/post/2016/01/18/getting-started-with-change-tracking-in-sql-server/

QUESTION 3

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.

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You have the following line-of-business solutions:

- ERP system
- Online WebStore
- Partner extranet

One or more Microsoft SQL Server instances support each solution. Each solution has its own product catalog. You have an additional server that hosts SQL Server Integration Services (SSIS) and a data warehouse. You populate the data warehouse with data from each of the line-of-business solutions. The data warehouse does not store primary key values from the individual source tables.

The database for each solution has a table named Products that stored product information. The Products table in each database uses a separate and unique key for product records. Each table shares a column named ReferenceNr between the databases. This column is used to create queries that involve more than once solution.

You need to load data from the individual solutions into the data warehouse nightly. The following requirements must be met:

- If a change is made to the ReferenceNr column in any of the sources, set the value of IsDisabled to True and create a new row in the Products table.
- If a row is deleted in any of the sources, set the value of IsDisabled to True in the data warehouse.

Solution: Perform the following actions:

• Enable the Change Tracking for the Product table in the source databases.



- Query the cdc.fn_cdc_get_all_changes_capture_dbo_products function from the sources for updated rows.
- Set the IsDisabled column to True for rows with the old ReferenceNr value.
- Create a new row in the data warehouse Products table with the new ReferenceNr value.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

We must also handle the deleted rows, not just the updated rows.

References: https://solutioncenter.apexsql.com/enable-use-sql-server-change-data-capture/

QUESTION 4

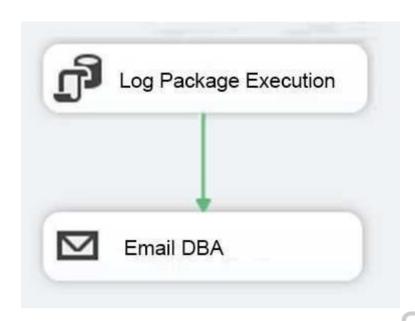
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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 are developing a Microsoft SQL Server Integration Services (SSIS) projects. The project consists of several packages that load data warehouse tables.

You need to extend the control flow design for each package to use the following control flow while minimizing development efforts and maintenance:





Solution: You add the control flow to a script task. You add an instance of the script task to the storage account in Microsoft Azure.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

A package consists of a control flow and, optionally, one or more data flows. You create the control flow in a package by using the Control Flow tab in SSIS Designer.

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References: https://docs.microsoft.com/en-us/sql/integration-services/control-flow/control-flow

QUESTION 5



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.

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You are developing a Microsoft SQL Server Integration Services (SSIS) projects. The project consists of several packages that load data warehouse tables.

You need to extend the control flow design for each package to use the following control flow while minimizing development efforts and maintenance:



Solution: You add the control flow to an ASP.NET assembly. You add a script task that references this assembly to each data warehouse load package.

Does the solution meet the goal?

- A. Yes
- B. No



Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

A package consists of a control flow and, optionally, one or more data flows. You create the control flow in a package by using the Control Flow tab in SSIS Designer.

References: https://docs.microsoft.com/en-us/sql/integration-services/control-flow/control-flow

QUESTION 6

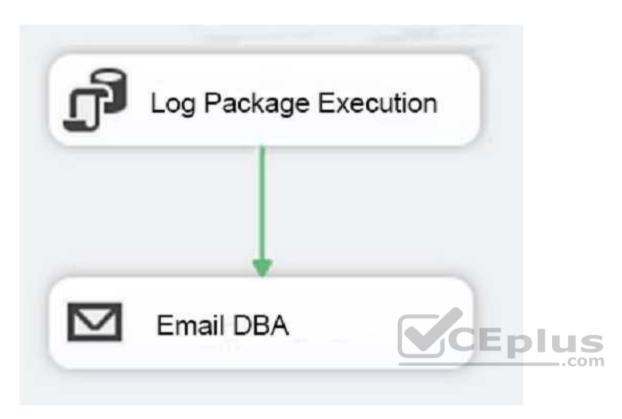
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After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a Microsoft SQL Server Integration Services (SSIS) projects. The project consists of several packages that load data warehouse tables.

You need to extend the control flow design for each package to use the following control flow while minimizing development efforts and maintenance:





Solution: You add the control flow to a control flow package part. You add an instance of the control flow package part to each data warehouse load package.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:



A package consists of a control flow and, optionally, one or more data flows. You create the control flow in a package by using the Control Flow tab in SSIS Designer.

References: https://docs.microsoft.com/en-us/sql/integration-services/control-flow/control-flow

QUESTION 7

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 a Microsoft SQL Server data warehouse instance that supports several client applications.

The data warehouse includes the following tables: Dimension.SalesTerritory, Dimension.Customer, Dimension.Date, Fact.Ticket, and Fact.Order. The Dimension.SalesTerritory and Dimension.Customer tables are frequently updated. The Fact.Order table is optimized for weekly reporting, but the company wants to change it to daily. The Fact.Order table is loaded by using an ETL process. Indexes have been added to the table over time, but the presence of these indexes slows data loading.

All data in the data warehouse is stored on a shared SAN. All tables are in a database named DB1. You have a second database named DB2 that contains copies of production data for a development environment. The data warehouse has grown and the cost of storage has increased. Data older than one year is accessed infrequently and is considered historical.

- You have the following requirements:

 Implement table partitioning to improve the manageability of the data warehouse and to avoid the need to repopulate all transactional data each night. Use a partitioning strategy that is as granular as possible.
- Partition the Fact. Order table and retain a total of seven years of data.
- Partition the Fact. Ticket table and retain seven years of data. At the end of each month, the partition structure must apply a sliding window strategy to ensure that a new partition is available for the upcoming month, and that the oldest month of data is archived and removed.
- Optimize data loading for the Dimension.SalesTerritory, Dimension.Customer, and Dimension.Date tables.
- Incrementally load all tables in the database and ensure that all incremental changes are processed.
- Maximize the performance during the data loading process for the Fact. Order partition.
- Ensure that historical data remains online and available for querying.
- Reduce ongoing storage costs while maintaining query performance for current data.

You are not permitted to make changes to the client applications.

You need to implement the data partitioning strategy.

How should you partition the Fact.Order table?

- A. Create 17,520 partitions.
- B. Use a granularity of two days.



C. Create 2,557 partitions.

D. Create 730 partitions.

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Explanation:

We create on partition for each day, which means that a granularity of one day is used. 7 years times 365 days is 2,555. Make that 2,557 to provide for leap years.

From scenario: Partition the Fact.Order table and retain a total of seven years of data.

The Fact.Order table is optimized for weekly reporting, but the company wants to change it to daily.

Maximize the performance during the data loading process for the Fact.Order partition.

Reference: https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-partition

QUESTION 8

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 a Microsoft SQL Server data warehouse instance that supports several client applications.

The data warehouse includes the following tables: Dimension.SalesTerritory, Dimension.Customer, Dimension.Date, Fact.Ticket, and Fact.Order. The Dimension.SalesTerritory and Dimension.Customer tables are frequently updated. The Fact.Order table is optimized for weekly reporting, but the company wants to change it to daily. The Fact.Order table is loaded by using an ETL process. Indexes have been added to the table over time, but the presence of these indexes slows data loading.

All data in the data warehouse is stored on a shared SAN. All tables are in a database named DB1. You have a second database named DB2 that contains copies of production data for a development environment. The data warehouse has grown and the cost of storage has increased. Data older than one year is accessed infrequently and is considered historical.

You have the following requirements:

- Implement table partitioning to improve the manageability of the data warehouse and to avoid the need to repopulate all transactional data each night. Use a partitioning strategy that is as granular as possible.
- Partition the Fact.Order table and retain a total of seven years of data.
- Partition the Fact. Ticket table and retain seven years of data. At the end of each month, the partition structure must apply a sliding window strategy to ensure that a new partition is available for the upcoming month, and that the oldest month of data is archived and removed.
- Optimize data loading for the Dimension.SalesTerritory, Dimension.Customer, and Dimension.Date tables.
- Incrementally load all tables in the database and ensure that all incremental changes are processed.



- Maximize the performance during the data loading process for the Fact.Order partition.
- Ensure that historical data remains online and available for querying.
- Reduce ongoing storage costs while maintaining query performance for current data.

You are not permitted to make changes to the client applications.

You need to optimize the storage for the data warehouse.

What change should you make?

- A. Partition the Fact.Order table, and move historical data to new filegroups on lower-cost storage.
- B. Create new tables on lower-cost storage, move the historical data to the new tables, and then shrink the database.
- C. Remove the historical data from the database to leave available space for new data.
- D. Move historical data to new tables on lower-cost storage.

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:

Create the load staging table in the same filegroup as the partition you are loading.

Create the unload staging table in the same filegroup as the partition you are deleteing.

From scenario: Data older than one year is accessed infrequently and is considered historical.

References: https://blogs.msdn.microsoft.com/sqlcat/2013/09/16/top-10-best-practices-for-building-a-large-scale-relational-data-warehouse/

QUESTION 9

HOTSPOT

You manage a data warehouse in a Microsoft SQL Server instance. Company employee information is imported from the human resources system to a table named Employee in the data warehouse instance. The Employee table was created by running the query shown in the Employee Schema exhibit. (Click the Exhibit button.)

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```
EmployeeID int IDENTITY (1,1) PRIMARY KEY,
EmployeeSSN int NULL UNIQUE,
EmployeeName nvarchar(100) NOT NULL
CEPIUS
```

The personal identification number is stored in a column named EmployeeSSN. All values in the EmployeeSSN column must be unique.

When importing employee data, you receive the error message shown in the SQL Error exhibit. (Click the Exhibit button.).





Msg 2627, Level 14, State 1, Line 13

Violation of UNIQUE Key constraint 'UQ_DimEmplo_8549FE539cf2eca'. Cannot insert duplicate ke object 'dbo.DimEmployee'. The duplicate key value if (<NULL).

The statement has been terminated.

You determine that the Transact-SQL statement shown in the Data Load exhibit is the cause of the error. (Click the Exhibit button.)

```
INSERT dbo.DimEmployee (EmployeeSSN, EmployeeName)
SELECT NULL, EmployeeName
FROM HR.dbo.Employee
```

You remove the constraint on the EmployeeSSN column. You need to ensure that values in the EmployeeSSN column are unique.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:



Answer Area

Yes No

Creating a clustered unique index on the EmployeeSSN column solves the issue. 0

0

Creating a filtered unique index on the EmployeeSSN column solves the issue.

0

0

Correct Answer:

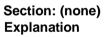




Answer Area

Creating a clustered unique index on the EmployeeSSN column solves the issue.

Creating a filtered unique index on the EmployeeSSN column solves the issue.



Explanation/Reference:

Explanation:

With the ANSI standards SQL:92, SQL:1999 and SQL:2003, an UNIQUE constraint must disallow duplicate non-NULL values but accept multiple NULL values.

In the Microsoft world of SQL Server however, a single NULL is allowed but multiple NULLs are not.

From SQL Server 2008, you can define a unique filtered index based on a predicate that excludes NULLs.

References: https://stackoverflow.com/questions/767657/how-do-i-create-a-unique-constraint-that-also-allows-nulls

QUESTION 10

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 a database administrator for an e-commerce company that runs an online store. The company has three databases as described in the following table.



Database	Description		
DB1	This database supports the online store.		
DB2	This is the data warehouse for the company. DB2 contains a table named OnlineOrder that is partitioned in hourly increments. The LOCK_ESCALATION option is set to AUTO . The data flow contains 24 OLE DB destinations, one for each partition.		
DB3	This database runs Master Data Services (MDS).		

You plan to load at least one million rows of data each night from DB1 into the OnlineOrder table. You must load data into the correct partitions using a parallel process.

You create 24 Data Flow tasks. You must place the tasks into a component to allow parallel load. After all of the load processes compete, the process must proceed to the next task.

You need to load the data for the OnlineOrder table.

What should you use?

- A. Lookup transformation
- B. Merge transformation
- C. Merge Join transformation
- D. MERGE statement
- E. Union All transformation
- F. Balanced Data Distributor transformation
- G. Sequential container
- H. Foreach Loop container

Correct Answer: H Section: (none) Explanation



Explanation:

The Parallel Loop Task is an SSIS Control Flow task, which can execute multiple iterations of the standard Foreach Loop Container concurrently.

References: http://www.cozyroc.com/ssis/parallel-loop-task





QUESTION 11

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 a database administrator for an e-commerce company that runs an online store. The company has the databases described in the following table.

Database	Description		
DB1 DB2	This database supports the online store.		
	This is the data warehouse for the company. DB2 contains a table named OnlineOrder that is partitioned in hourly increments. The LOCK_ESCALATION option is set to AUTO . The data flow contains 24 OLE DB destinations, one for each partition.		
DB3	This database runs Master Data Services (MDS).		

Each day, you publish a Microsoft Excel workbook that contains a list of product names and current prices to an external website. Suppliers update pricing information in the workbook. Each supplier saves the workbook with a unique name.

Each night, the Products table is deleted and refreshed from MDS by using a Microsoft SQL Server Integration Services (SSIS) package. All files must be loaded in sequence.

You need to add a data flow in an SSIS package to perform the Excel files import in the data warehouse.

What should you use?

- A. Lookup transformation
- B. Merge transformation
- C. Merge Join transformation
- D. MERGE statement
- E. Union All transformation
- F. Balanced Data Distributor transformation
- G. Sequential container
- H. Foreach Loop container

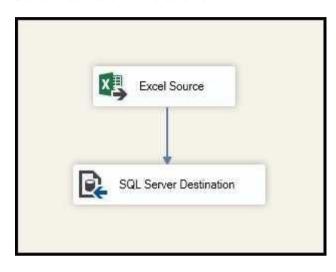
Correct Answer: A Section: (none) Explanation



Explanation/Reference:

Explanation:

If you're familiar with SSIS and don't want to run the SQL Server Import and Export Wizard, create an SSIS package that uses the Excel Source and the SQL Server Destination in the data flow.





References: https://docs.microsoft.com/en-us/sql/integration-services/import-export-data/import-data-from-excel-to-sql

QUESTION 12

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 a database administrator for an e-commerce company that runs an online store. The company has the databases described in the following table.

Database	Description		
DB1	This database supports the online store.		
DB2	This is the data warehouse for the company. DB2 contains a table named OnlineOrder that is partitioned in hourly increments. The LOCK_ESCALATION option is set to AUTO . The data flow contains 24 OLE DB destinations, one for each partition.		
DB3	This database runs Master Data Services (MDS).		



Each day, data from the table OnlineOrder in DB2 must be exported by partition. The tables must not be locked during the process.

You need to write a Microsoft SQL Server Integration Services (SSIS) package that performs the data export.

What should you use?

- A. Lookup transformation
- B. Merge transformation
- C. Merge Join transformation
- D. MERGE statement
- E. Union All transformation
- F. Balanced Data Distributor transformation
- G. Sequential container
- H. Foreach Loop container

Correct Answer: E Section: (none) Explanation

Explanation/Reference:

Explanation:



The Union All transformation combines multiple inputs into one output. For example, the outputs from five different Flat File sources can be inputs to the Union All transformation and combined into one output.

 $References: \ https://docs.microsoft.com/en-us/sql/integration-services/data-flow/transformations/union-all-transformation$

QUESTION 13

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 a database administrator for an e-commerce company that runs an online store. The company has the databases described in the following table.



Database	Description		
DB1	This database supports the online store.		
DB2	This is the data warehouse for the company. DB2 contains a table named OnlineOrder that is partitioned in hourly increments. The LOCK_ESCALATION option is set to AUTO . The data flow contains 24 OLE DB destinations, one for each partition.		
DB3	This database runs Master Data Services (MDS).		

Product prices are updated and are stored in a table named Products on DB1. The Products table is deleted and refreshed each night from MDS by using a Microsoft SQL Server Integration Services (SSIS) package. None of the data sources are sorted.

You need to update the SSIS package to add current prices to the Products table.

What should you use?

- A. Lookup transformation
- B. Merge transformation
- C. Merge Join transformation
- D. MERGE statement
- E. Union All transformation
- F. Balanced Data Distributor transformation
- G. Sequential container
- H. Foreach Loop container

Correct Answer: D Section: (none) Explanation



Explanation/Reference:

Explanation:

In the current release of SQL Server Integration Services, the SQL statement in an Execute SQL task can contain a MERGE statement. This MERGE statement enables you to accomplish multiple INSERT, UPDATE, and DELETE operations in a single statement.

References: https://docs.microsoft.com/en-us/sql/integration-services/control-flow/merge-in-integration-services-packages



QUESTION 14

You have a Microsoft SQL Server Integration Services (SSIS) package that includes the control flow shown in the following diagram.



You need to choose the enumerator for the Foreach Loop container.

Which enumerator should you use?

- A. Foreach SMO Enumerator
- B. Foreach ADO.Net Schema Rowset Enumerator
- C. Foreach NodeList Enumerator
- D. Foreach ADO Enumerator



Correct Answer: D Section: (none) Explanation

Explanation/Reference:

Explanation:

Use the Foreach ADO enumerator to enumerate rows in tables. For example, you can get the rows in an ADO recordset.

References: https://docs.microsoft.com/en-us/sql/integration-services/control-flow/foreach-loop-container?view=sql-server-2017

QUESTION 15

HOTSPOT

You have a database named DB1. You create a Microsoft SQL Server Integration Services (SSIS) package that incrementally imports data from a table named Customers. The package uses an OLE DB data source for connections to DB1. The package defines the following variables.

	Description
t64	LastKey stores the last identifier used in the imported table.
ring	TableName stores the name of the imported table.
	77000 0

To support incremental data loading, you create a table by running the following Transact-SQL segment:

```
CREATE TABLE LastKeyByTable (
    Id int IDENTITY(1,1) PRIMARY KEY,
    TableName sysname UNIQUE,
    LastKey bigint
)
```

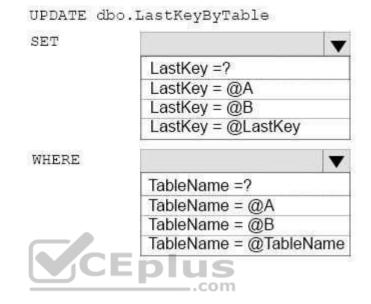
You need to create a DML statements that updates the LastKeyByTable table.

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

Hot Area:



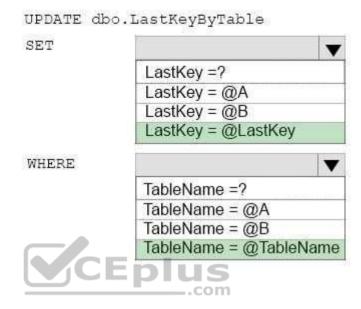
Answer Area



Correct Answer:



Answer Area



Section: (none) Explanation

Explanation/Reference:

QUESTION 16

DRAG DROP

You administer a Microsoft SQL Server Master Data Services (MDS) model. All model entity members have passed validation.

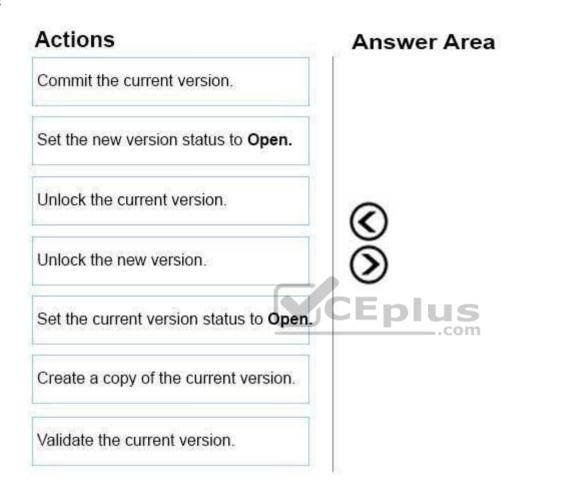
The current model version should be committed to form a record of master data that can be audited and create a new version to allow the ongoing management of the master data.

You lock the current version. You need to manage the model versions.

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.

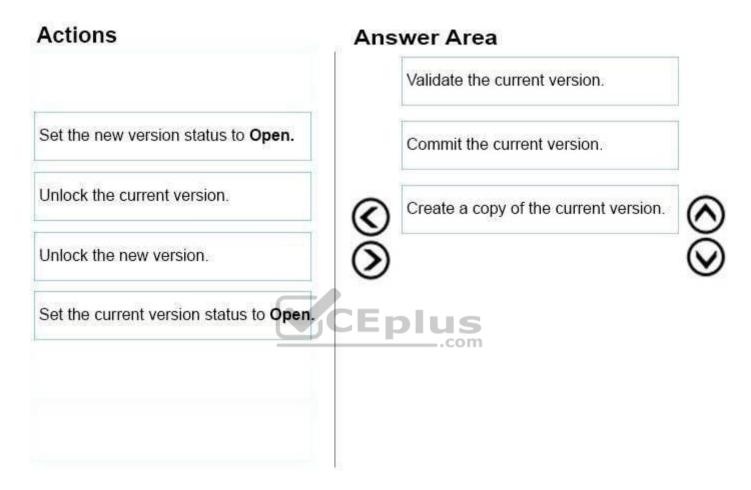


Select and Place:



Correct Answer:





Section: (none) Explanation

Explanation/Reference:

Explanation:

Box 1: Validate the current version.

In Master Data Services, validate a version to apply business rules to all members in the model version.



You can validate a version after it has been locked.

Box 2: Commit the current version.

In Master Data Services, commit a version of a model to prevent changes to the model's members and their attributes. Committed versions cannot be unlocked.

Prerequisites:

- The version's status must be Locked.
- All members must have validated successfully.

Box 3: Create a copy of the current version.

In Master Data Services, copy a version of the model to create a new version of it.

Note:

Reference: https://docs.microsoft.com/en-us/sql/master-data-services/lock-a-version-master-data-services

QUESTION 17

You have a data quality project that focuses on the Products catalog for the company. The data includes a product reference number.

The product reference should use the following format: Two letters followed by an asterisk and then four or five numbers. An example of a valid number is XX*55522. Any reference number that does not conform to the format must be rejected during the data cleansing.

You need to add a Data Quality Services (DQS) domain rule in the Products domain.

Which rule should you use?

- A. value matches pattern ZA*9876[5]
- B. value matches pattern AZ[*]1234[5]
- C. value matches regular expression AZ[*]1234[5]
- D. value matches pattern [a-zA-Z][a-zA-Z]*[0-9][0-9] [0-9][0-9]?

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:

For a pattern matching rule:

Any letter (A...Z) can be used as a pattern for any letter; case insensitive



Any digit (0...9) can be used as a pattern for any digit Any special character, except a letter or a digit, can be used as a pattern for itself

Brackets, [], define optional matching

Example: ABC:0000

This rule implies that the data will contain three parts: any three letters followed by a colon (:), which is again followed by any four digits.

QUESTION 18

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 have a data warehouse that stores information about products, sales, and orders for a manufacturing company. The instance contains a database that has two tables named **SalesOrderHeader** and **SalesOrderDetail**. **SalesOrderHeader** has 500,000 rows and **SalesOrderDetail** has 3,000,000 rows.

Users report performance degradation when they run the following stored procedure:

```
CREATE PROCEDURE Sales.GetRecentSales (@date datetime)

AS BEGIN

IF @date is NULL

SET @date = DATEADD(MONTH, -3, (SELECT MAX(ORDERDATE) FROM Sales.SalesOrderHeader))

SELECT * FROM Sales.SalesOrderHeader h, Sales.SalesOrderDetail d

WHERE h.SalesOrderID = d.SalesOrderID

AND h.OrderDate > @date

END
```

You need to optimize performance.

Solution: You run the following Transact-SQL statement:

```
CREATE STATISTICS Stat1
ON Sales.SalesOrderHeader (OrderDate)
WITH FULLSCAN
```



Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:

UPDATE STATISTICS updates query optimization statistics on a table or indexed view. FULLSCAN computes statistics by scanning all rows in the table or indexed view. FULLSCAN and SAMPLE 100 PERCENT have the same results.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/update-statistics-transact-sql?view=sql-server-2017

QUESTION 19

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 plan to deploy a Microsoft SQL server that will host a data warehouse named DB1.

The server will contain four SATA drives configured as a RAID 10 array.

You need to minimize write contention on the transaction log when data is being loaded to the database.

Solution: You replace the SATA disks with SSD disks.

Does this meet the goal?





https://vceplus.com/

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

A data warehouse is too big to store on an SSD.

Instead you should place the log file on a separate drive.

References: https://docs.microsoft.com/en-us/sql/relational-databases/policy-based-management/place-data-and-log-files-on-separate-drives?view=sql-server-2017

QUESTION 20

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 plan to deploy a Microsoft SQL server that will host a data warehouse named DB1.

The server will contain four SATA drives configured as a RAID 10 array.

You need to minimize write contention on the transaction log when data is being loaded to the database.

Solution: You add more data files to **DB1**.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation



Explanation/Reference:

Explanation:

There is no performance gain, in terms of log throughput, from multiple log files. SQL Server does not write log records in parallel to multiple log files.

Instead you should place the log file on a separate drive.

References:

https://www.red-gate.com/simple-talk/sql/database-administration/optimizing-transaction-log-throughput/ https://docs.microsoft.com/en-us/sql/relational-databases/policy-based-management/place-data-and-log-files-on-separate-drives?view=sql-server-2017

QUESTION 21

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 plan to deploy a Microsoft SQL server that will host a data warehouse named DB1.

The server will contain four SATA drives configured as a RAID 10 array.

You need to minimize write contention on the transaction log when data is being loaded to the database.

Solution: You configure the server to automatically delete the transaction logs nightly.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

You should place the log file on a separate drive.

References:

https://www.red-gate.com/simple-talk/sql/database-administration/optimizing-transaction-log-throughput/ https://docs.microsoft.com/en-us/sql/relational-databases/policy-based-management/place-data-and-log-files-on-separate-drives?view=sql-server-2017



QUESTION 22

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.

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After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You have a Microsoft Azure SQL Data Warehouse instance. You run the following Transact-SQL statement:

```
SELECT CustomerKey, SUM(SalesAmt) TotalSales
FROM sales.FactOrders
GROUP BY CustomerKey
```

The query fails to return results.

You need to determine why the query fails.

Solution: You run the following Transact-SQL statements:

```
SELECT CustomerKey, SUM(SalesAmt) TotalSales
FROM sales.FactOrders
GROUP BY CustomerKey
OPTION (LABEL = 'TotalSales')

SELECT TOP 1 status, total_elapsed_time, submit_time
FROM sys.dm_pdw_exec_requests
WHERE [label] = 'TotalSales'
ORDER BY submit_time
```

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A Section: (none) Explanation



Explanation/Reference:

Explanation:

To use submit_time we must use sys.dm_pdw_exec_requests table, which holds information about all requests currently or recently active in SQL Data Warehouse. It lists one row per request/query.

Label is an Optional label string associated with some SELECT query statements.

References: https://docs.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-pdw-exec-requests-transact-sql?view=apspdw-2016-au7

QUESTION 23

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 have a Microsoft Azure SQL Data Warehouse instance. You run the following Transact-SQL statement:

```
SELECT CustomerKey, SUM(SalesAmt) TotalSales
FROM sales.FactOrders
GROUP BY CustomerKey
```



The guery fails to return results.

You need to determine why the query fails.

Solution: You run the following Transact-SQL statements:

```
SELECT CustomerKey, SUM(SalesAmt) TotalSales
FROM sales.FactOrders
GROUP BY CustomerKey
OPTION (QueryId = 'TotalSales')

SELECT TOP 1 status, total_elapsed_time, submit_time
FROM sys.dm_pdw_exec_requests
WHERE [QueryId] = 'TotalSales'
ORDER BY submit_time
```



Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

We must use Label, not QueryID in the WHERE clause.

References: https://docs.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-pdw-exec-requests-transact-sql?view=apspdw-2016-au7

QUESTION 24

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

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

Your company uses Microsoft SQL Server to deploy a data warehouse to an environment that has a SQL Server Analysis Services (SSAS) instance. The data warehouse includes the **Fact.Order** table as shown in the following table definition. The table has no indexes.



Fact.Order Columns Order Key (bigint, not null) City Key (int, not null) Customer Key (int, not null) Stock Item Key (int, not null) Order Date Key (date, not null) Picked Date Key (date, null) Salesperson Key (int, not null) Picker Key (int, null) Quantity (int, not null) Unit Price (decimal(18,2), not null) CEPIUS Tax Rate (decimal(18,3), not null) Total Excluding Tax (decimal(18,2), not null) Tax Amount (decimal(18,2), not null) Total Including Tax (decimal(18,2), not null)

You must minimize the amount of space that indexes for the **Fact.Order** table consume. You run the following queries frequently. Both queries must be able to use a columnstore index:



```
SELECT AVG([Tax Amount]) AS [Average Tax Amount]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
SELECT SUM([Total Excluding Tax]) AS [Total Revenue]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
```

You need to ensure that the queries complete as quickly as possible.

Solution: You create a measure for the **Fact.Order** table.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation



Explanation/Reference:

Explanation:

You should use a columnstore index.

Columnstore indexes are the standard for storing and querying large data warehousing fact tables. This index uses column-based data storage and query processing to achieve gains up to 10 times the query performance in your data warehouse over traditional row-oriented storage.

References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-overview?view=sql-server-2017

QUESTION 25

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

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



Your company uses Microsoft SQL Server to deploy a data warehouse to an environment that has a SQL Server Analysis Services (SSAS) instance. The data warehouse includes the **Fact.Order** table as shown in the following table definition. The table has no indexes.



You must minimize the amount of space that indexes for the **Fact.Order** table consume. You run the following queries frequently. Both queries must be able to use a columnstore index:



```
SELECT AVG([Tax Amount]) AS [Average Tax Amount]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
SELECT SUM([Total Excluding Tax]) AS [Total Revenue]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
```

You need to ensure that the queries complete as quickly as possible.

Solution: You create two nonclustered indexes. The first includes the [Order Date Key] and [Tax Amount] columns. The second will include the [Order Date Key] and [Total Excluding Tax] columns.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation



Explanation/Reference:

Explanation:

You should use a columnstore index.

Columnstore indexes are the standard for storing and querying large data warehousing fact tables. This index uses column-based data storage and query processing to achieve gains up to 10 times the query performance in your data warehouse over traditional row-oriented storage.

References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-overview?view=sql-server-2017

QUESTION 26

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

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



Your company uses Microsoft SQL Server to deploy a data warehouse to an environment that has a SQL Server Analysis Services (SSAS) instance. The data warehouse includes the **Fact.Order** table as shown in the following table definition. The table has no indexes.



You must minimize the amount of space that indexes for the **Fact.Order** table consume. You run the following queries frequently. Both queries must be able to use a columnstore index:



```
SELECT AVG([Tax Amount]) AS [Average Tax Amount]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
SELECT SUM([Total Excluding Tax]) AS [Total Revenue]
FROM Fact.Order
WHERE [Order Date Key] BETWEEN '20150701' AND '20151231'
```

You need to ensure that the queries complete as quickly as possible.

Solution: You create one columnstore index that includes the [Order Date Key], [Tax Amount], and [Total Excluding Tax] columns.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A Section: (none) Explanation



Explanation/Reference:

Explanation:

You should use a columnstore index.

Columnstore indexes are the standard for storing and querying large data warehousing fact tables. This index uses column-based data storage and query processing to achieve gains up to 10 times the query performance in your data warehouse over traditional row-oriented storage.

References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-overview?view=sql-server-2017

QUESTION 27

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 have a Microsoft SQL server that has Data Quality Services (DQS) installed.



You need to review the completeness and the uniqueness of the data stored in the matching policy.

Solution: You profile the data.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Explanation:

Use a matching rule.

References: https://docs.microsoft.com/en-us/sql/data-quality-services/create-a-matching-policy?view=sql-server-2017

QUESTION 28

You have a server that has Data Quality Services (DQS) installed.

You create a matching policy that contains one matching rule.

You need to configure the Similarity of Similar percentage that defines a match.

Which similarity percentage will always generate a similarity score of 0?

A. 55

B. 80

C. 70

D. 75

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Explanation:



The minimum similarity between the values of a field is 60%. If the calculated matching score for a field of two records is less than 60, the similarity score is automatically set to 0.

References: https://docs.microsoft.com/en-us/sql/data-quality-services/create-a-matching-policy?view=sql-server-2017

QUESTION 29

You need to ensure that a downstream system can consume data in a Master Data Services (MDS) system.

What should you configure?

A. a Data Collector

B. a knowledge base

C. a matching policy

D. a subscription view

Correct Answer: D Section: (none) **Explanation**

Explanation/Reference:

Explanation:

Subscription views to consume your master data.

References: https://docs.microsoft.com/en-us/sql/master-data-services/master-data-services-overview-mds?view=sql-server-2017

QUESTION 30

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 a database named **DB1** that has change data capture enabled.

A Microsoft SQL Server Integration Services (SSIS) job runs once weekly. The job loads changes from DB1 to a data warehouse by querying the change data capture tables.

You remove the Integration Services job.

You need to stop tracking changes to the database temporarily. The solution must ensure that tracking changes can be restored quickly in a few weeks.

Which stored procedure should you execute?



- A. catalog.deploy project
- B. catalog.restore_projec t
- C. catalog.stop_operation
- D. sys.sp cdc add job
- E. sys.sp_cdc_change_jo
- F. sys.sp_cdc_disable_d b
- G. sys.sp cdc enable db
- H. sys.sp_cdc_stop_job

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Explanation: catalog.stop_operation stops a validation or instance of execution in the Integration Services catalog.

Incorrect Answers:

H: sys.sp_cdc_stop_job stops a change data capture cleanup or capture job for the current database.

References: https://docs.microsoft.com/en-us/sql/integration-services/system-stored-procedures/catalog-stop-operation-ssisdb-database?view=sql-server-2017

QUESTION 31

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 a database named DB1 that has change data capture enabled.

A Microsoft SQL Server Integration Services (SSIS) job runs once weekly. The job loads changes from **DB1** to a data warehouse by querying the change data capture tables.

A new version of the Integration Services package is released that introduces several errors in the loading process.

You need to roll back the Integration Services package to the previous version.



Which stored procedure should you execute?

- A. catalog.deploy_project
- B. catalog.restore_projec t
- C. catalog.stop operation
- D. sys.sp_cdc_add_job
- E. sys.sp_cdc_change_jo h
- F. sys.sp_cdc_disable_d b
- G. sys.sp_cdc_enable_db
- H. sys.sp_cdc_stop_job

Correct Answer: B Section: (none) Explanation



Explanation/Reference:

Explanation: catalog.restore_project restores a project in the Integration Services catalog to a previous version.

References: https://docs.microsoft.com/en-us/sql/integration-services/system-stored-procedures/catalog-restore-project-ssisdb-database?view=sql-server-2017

QUESTION 32

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 loading data from an OLTP database to a data warehouse.

The OLTP database includes a table for sales data and a table for refund data.

The data warehouse contains a single table for all the sales and refund data.

Which component should you use to load the data to the data warehouse?

A. the Slowly Changing Dimension transformation



- B. the Conditional Split transformation
- C. the Merge transformation
- D. the Data Conversion transformation
- E. an Execute SQL task
- F. the Aggregate transformation
- G. the Lookup transformation

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Explanation:

The Merge transformation combines two sorted datasets into a single dataset. The rows from each dataset are inserted into the output based on values in their key columns.

By including the Merge transformation in a data flow, you can merge data from two data sources, such as tables and files.

References: https://docs.microsoft.com/en-us/sql/integration-services/data-flow/transformations/merge-transformation?view=sql-server-2017

QUESTION 33

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 designing a data warehouse and the load process for the data warehouse.

You have a source system that contains two tables named Table1 and Table2. All the rows in each table have a corresponding row in the other table.

The primary key for Table1 is named Key1. The primary key for Table2 is named Key2.

You need to combine both tables into a single table named **Table3** in the data warehouse. The solution must ensure that all the nonkey columns in **Table1** and **Table2** exist in **Table3**.

Which component should you use to load the data to the data warehouse?

- A. the Slowly Changing Dimension transformation
- B. the Conditional Split transformation
- C. the Merge transformation



D. the Data Conversion transformation

E. an Execute SQL task

F. the Aggregate transformation

G. the Lookup transformation

Correct Answer: G Section: (none) Explanation

Explanation/Reference:

Explanation:

The Lookup transformation performs lookups by joining data in input columns with columns in a reference dataset. You use the lookup to access additional information in a related table that is based on values in common columns.

You can configure the Lookup transformation in the following ways:

Specify joins between the input and the reference dataset.

Add columns from the reference dataset to the Lookup transformation output.

Etc.

Incorrect Answers:

F: The Aggregate transformation applies aggregate functions, such as Average, to column values and copies the results to the transformation output. Besides aggregate functions, the transformation provides the GROUP BY clause, which you can use to specify groups to aggregate across.

References: https://docs.microsoft.com/en-us/sql/integration-services/data-flow/transformations/lookup-transformation

QUESTION 34

You have a data warehouse named **DW1**.

In DW1, you plan to create a table named Table1 that will be partitioned by hour. Table1 will contain the last three hours of data.

You plan to implement a sliding window process for inserting data into **Table1**.

You need to recommend the minimum number of partitions that must be included in **Table1** to support the planned implementation. The solution must minimize the number of transaction log records created during the insert process.

How many partitions should you recommend?

A. 3

B. 5



C. 9

D. 24

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

QUESTION 35

You plan to deploy several Microsoft SQL Server Integration Services (SSIS) packages to a highly available SQL Server instance. The instance is configured to use an AlwaysOn availability group that has two replicas.

You need to identify which deployment method must be used to ensure that the packages are always accessible from all the nodes in the availability group.

Which deployment method should you use for the packages?

- A. Deploy to the msdb database on the secondary replica.
- B. Deploy to the msdb database on the primary replica.
- C. Deploy to a file on the hard drive of the primary replica.
- D. Deploy to a shared folder on a file server.

Correct Answer: A Section: (none) Explanation

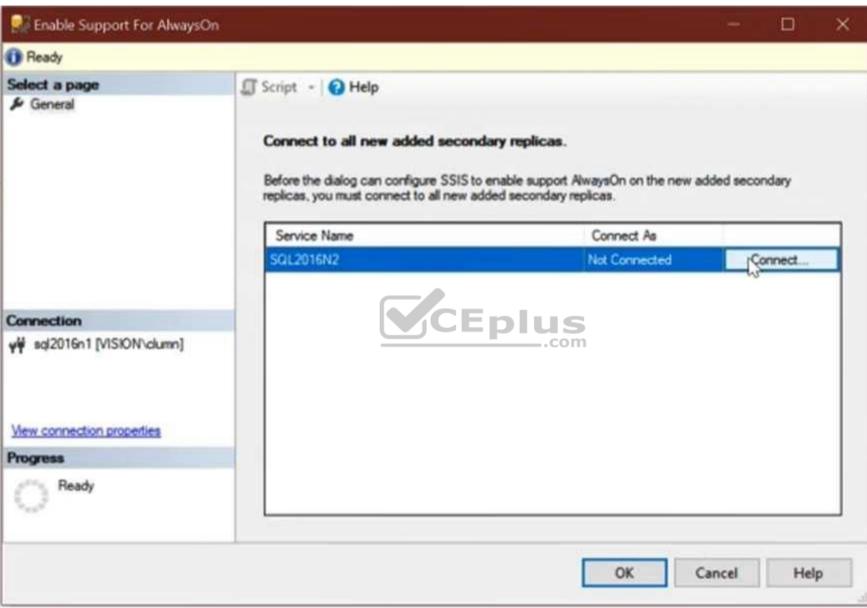


Explanation/Reference:

Explanation:

Before you can configure SSIS to enable support of AlwaysOn on the new added secondary Replicas, you must connect to all new added secondary replicas.







Note: To use SSIS with AlwaysOn, you'll need to add the SSIS Catalog (SSISDB) into an Availability Group. You'll need to do the following steps:

- Make sure you meet the prerequisites for using AlwaysOn
- Connect to every node and create the SSISDB catalog. We need to create the catalog even on secondary nodes to create the other server-level objects (cleanup jobs, keys, accounts etc) that are used by SSIS.
- Delete the SSISDB databases on secondary nodes.
- Create an availability group, specifying SSISDB as the user database
 Specify secondary replicas.

References: https://chrislumnah.com/2017/05/09/enabling-alwayson-for-ssisdb/

