

EXAMGOOD

QUESTION & ANSWER

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Exam : **DP-300**

Title : Administering Relational
Databases on Microsoft
Azure

Version : DEMO

1. Topic 1, Litware

Existing Environment

Network Environment

The manufacturing and research datacenters connect to the primary datacenter by using a VPN. The primary datacenter has an ExpressRoute connection that uses both Microsoft peering and private peering. The private peering connects to an Azure virtual network named HubVNet.

Identity Environment

Litware has a hybrid Azure Active Directory (Azure AD) deployment that uses a domain named litwareinc.com. All Azure subscriptions are associated to the litwareinc.com Azure AD tenant.

Database Environment

The sales department has the following database workload:

- An on-premises named SERVER1 hosts an instance of Microsoft SQL Server 2012 and two 1-TB databases.
- A logical server named SalesSrv01A contains a geo-replicated Azure SQL database named SalesSQLDb1. SalesSQLDb1 is in an elastic pool named SalesSQLDb1Pool. SalesSQLDb1 uses database firewall rules and contained database users.
- An application named SalesSQLDb1App1 uses SalesSQLDb1.

The manufacturing office contains two on-premises SQL Server 2016 servers named SERVER2 and SERVER3. The servers are nodes in the same Always On availability group. The availability group contains a database named ManufacturingSQLDb1

Database administrators have two Azure virtual machines in HubVnet named VM1 and VM2 that run Windows Server 2019 and are used to manage all the Azure databases.

Licensing Agreement

Litware is a Microsoft Volume Licensing customer that has License Mobility through Software Assurance.

Current Problems

SalesSQLDb1 experiences performance issues that are likely due to out-of-date statistics and frequent blocking queries.

Requirements

Planned Changes

Litware plans to implement the following changes:

- Implement 30 new databases in Azure, which will be used by time-sensitive manufacturing apps that have varying usage patterns. Each database will be approximately 20 GB.
- Create a new Azure SQL database named ResearchDB1 on a logical server named ResearchSrv01. ResearchDB1 will contain Personally Identifiable Information (PII) data.
- Develop an app named ResearchApp1 that will be used by the research department to populate and

access ResearchDB1.

- Migrate ManufacturingSQLDb1 to the Azure virtual machine platform.
- Migrate the SERVER1 databases to the Azure SQL Database platform.

Technical Requirements

Litware identifies the following technical requirements:

- Maintenance tasks must be automated.
- The 30 new databases must scale automatically.
- The use of an on-premises infrastructure must be minimized.
- Azure Hybrid Use Benefits must be leveraged for Azure SQL Database deployments.
- All SQL Server and Azure SQL Database metrics related to CPU and storage usage and limits must be analyzed by using Azure built-in functionality.

Security and Compliance Requirements

Litware identifies the following security and compliance requirements:

- Store encryption keys in Azure Key Vault.
- Retain backups of the PII data for two months.
- Encrypt the PII data at rest, in transit, and in use.
- Use the principle of least privilege whenever possible.
- Authenticate database users by using Active Directory credentials.
- Protect Azure SQL Database instances by using database-level firewall rules.
- Ensure that all databases hosted in Azure are accessible from VM1 and VM2 without relying on public endpoints.

Business Requirements

Litware identifies the following business requirements:

- Meet an SLA of 99.99% availability for all Azure deployments.
- Minimize downtime during the migration of the SERVER1 databases.
- Use the Azure Hybrid Use Benefits when migrating workloads to Azure.
- Once all requirements are met, minimize costs whenever possible.

HOTSPOT

You need to recommend the appropriate purchasing model and deployment option for the 30 new databases. The solution must meet the technical requirements and the business requirements.

What should you recommend? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Purchasing model: ▼

Azure virtual machine reserved instances
DTU
vCore

Deployment option: ▼

An Azure SQL Database elastic pool
An Azure SQL Database managed instance
A SQL Server Always On availability group

Answer:

Purchasing model: ▼

Azure virtual machine reserved instances
DTU
vCore

Deployment option: ▼

An Azure SQL Database elastic pool
An Azure SQL Database managed instance
A SQL Server Always On availability group

Explanation:

Box 1: DTU

Scenario:

- ☞ The 30 new databases must scale automatically.
- ☞ Once all requirements are met, minimize costs whenever possible.

You can configure resources for the pool based either on the DTU-based purchasing model or the vCore-based purchasing model.

In short, for simplicity, the DTU model has an advantage. Plus, if you're just getting started with Azure SQL Database, the DTU model offers more options at the lower end of performance, so you can get started at a lower price point than with vCore.

Box 2: An Azure SQL database elastic pool

Azure SQL Database elastic pools are a simple, cost-effective solution for managing and scaling multiple databases that have varying and unpredictable usage demands. The databases in an elastic pool are on a single server and share a set number of resources at a set price. Elastic pools in Azure SQL Database enable SaaS developers to optimize the price performance for a group of databases within a prescribed budget while delivering performance elasticity for each database.

2.You are evaluating the business goals.

Which feature should you use to provide customers with the required level of access based on their service agreement?

A. dynamic data masking

- B. Conditional Access in Azure
- C. service principals
- D. row-level security (RLS)

Answer: D

Explanation:

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/row-level-security?view=sql-server-ver15>

3.HOTSPOT

You need to implement the monitoring of SalesSQLDb1. The solution must meet the technical requirements.

How should you collect and stream metrics? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Collect metrics from:

	▼
The database only	
The elastic pool and the database	
The elastic pool only	
The server, the elastic pool, and the database	

Stream metrics to:

	▼
Azure Event Hubs	
Azure Log Analytics	
Azure Storage	

Answer:

Answer Area

Collect metrics from:

	▼
The database only	
The elastic pool and the database	
The elastic pool only	
The server, the elastic pool, and the database	

Stream metrics to:

	▼
Azure Event Hubs	
Azure Log Analytics	
Azure Storage	

Explanation:

Box 1: The server, the elastic pool, and the database

Senario:

SalesSQLDb1 is in an elastic pool named SalesSQLDb1Pool.

Litware technical requirements include: all SQL Server and Azure SQL Database metrics related to CPU and storage usage and limits must be analyzed by using Azure built-in functionality.

Box 2: Azure Event hubs

Scenario: Migrate ManufacturingSQLDb1 to the Azure virtual machine platform.

Event hubs are able to handle custom metrics.

4.DRAG DROP

You need to implement statistics maintenance for SalesSQLDb1. The solution must meet the technical requirements.

Which four 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

Answer Area

Create and configure a schedule.

Create a SQL Server Agent job.

Publish the runbook.

Create an Azure Automation account.

Import the SqlServer module.

Create a runbook that runs a PowerShell script.

Run `sp_add_jobserver`.

Answer:

Actions	Answer Area
Create and configure a schedule.	Create an Azure Automation account.
Create a SQL Server Agent job.	Import the SqlServer module.
Publish the runbook.	Create a runbook that runs a PowerShell script.
Create an Azure Automation account.	Create and configure a schedule.
Import the SqlServer module.	
Create a runbook that runs a PowerShell script.	
Run <code>sp_add_jobserver</code> .	

Explanation:

Automating Azure SQL DB index and statistics maintenance using Azure Automation:

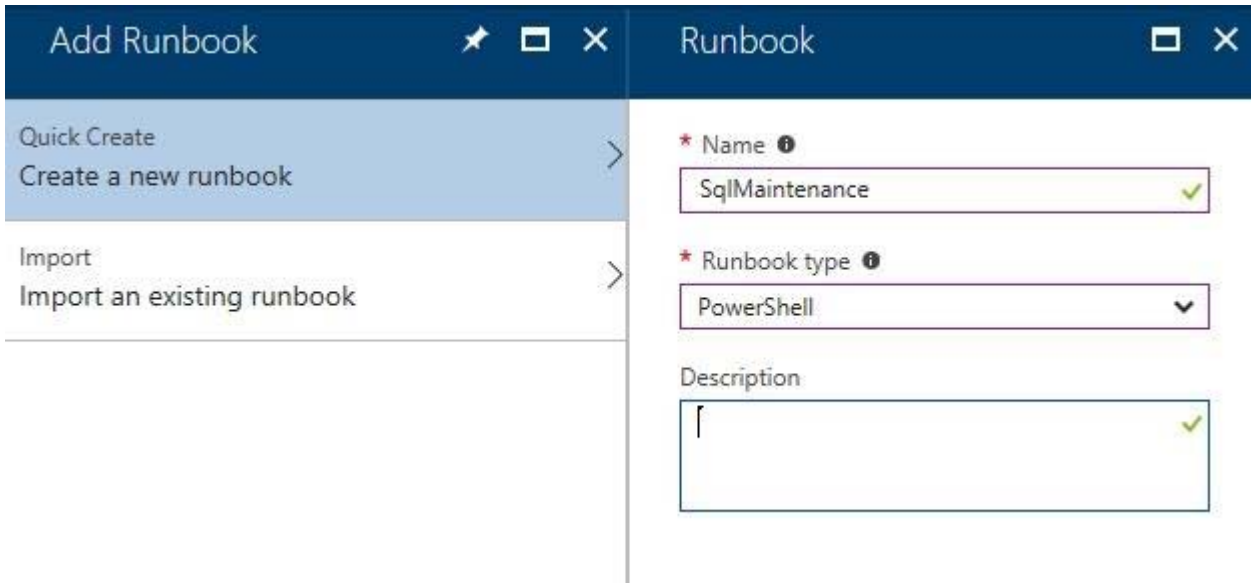
1. Create Azure automation account (Step 1)
2. Import SQL Server module (Step 2)
3. Add Credentials to access SQL DB

This will use secure way to hold login name and password that will be used to access Azure SQL DB

4. Add a runbook to run the maintenance (Step 3)

Steps: 1. Click on "runbooks" at the left panel and then click "add a runbook"

2. Choose "create a new runbook" and then give it a name and choose "Powershell" as the type of the runbook and then click on "create"



5. Schedule task (Step 4)

Steps:1. Click on Schedules2. Click on "Add a schedule" and follow the instructions to choose existing schedule or create a new schedule.

5.HOTSPOT

You are planning the migration of the SERVER1 databases. The solution must meet the business requirements.

What should you include in the migration plan? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area

Azure Database Migration

Service pricing tier:

▼
Standard 2-vCore
Standard 4-vCore
Premium 4-vCore

Required Azure resource:

▼
A virtual network that has service endpoints
A VPN gateway
An Azure Logic app

Answer:

Answer Area

Azure Database Migration

Service pricing tier:

	▼
Standard 2-vCore	
Standard 4-vCore	
Premium 4-vCore	

Required Azure resource:

	▼
A virtual network that has service endpoints	
A VPN gateway	
An Azure Logic app	

Explanation:

Azure Database Migration service

Box 1: Premium 4-VCORE

Scenario: Migrate the SERVER1 databases to the Azure SQL Database platform.

☞ Minimize downtime during the migration of the SERVER1 databases.

Premium 4-vCore is for large or business critical workloads. It supports online migrations, offline migrations, and faster migration speeds.