

Study Smart: Focus Only on What's Needed to Pass!

Exam Code

Search

Popular Exams

Microsoft

Cisco®

Amazon

CompTIA

Google



CCSP



SY0-601



350-401



AZ-900



AZ-104



200-301



CISSP



PMP

Microsoft



- SC-100 - Microsoft Cybersecurity Architect
- MS-900 - Microsoft 365 Fundamentals
- MB-220 - Microsoft Dynamics 365 for Marketing
- MB-920 - Microsoft Dynamics 365 Fundamentals Finance and Operations Apps (ERP) (beta)
- MB-310 - Microsoft Dynamics 365 Finance Functional Consultant
- PL-200 - Microsoft Power Platform Functional Consultant
- SC-900 - Microsoft Security, Compliance, and Identity Fundamentals
- PL-300 - Microsoft Power BI Data Analyst
- AZ-700 - Designing and Implementing Microsoft Azure Networking Solutions
- DP-300 - Administering Relational Databases on Microsoft Azure
- DP-203 - Data Engineering on Microsoft Azure
- AZ-400 - Microsoft Azure DevOps Solutions
- MB-910 - Microsoft Dynamics 365 Fundamentals Customer Engagement Apps (CRM)
- AZ-305 - Designing Microsoft Azure Infrastructure Solutions
- DP-100 - Designing and Implementing a Data Science Solution on Azure (beta)
- DP-500 - Designing and Implementing Enterprise-Scale Analytics Solutions Using Microsoft Azure and Microsoft Power BI
- AZ-104 - Microsoft Azure Administrator
- AZ-500 - Microsoft Azure Security Technologies
- DP-420 - Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB
- AZ-204 - Developing Solutions for Microsoft Azure
- MS-721 - Collaboration Communications Systems Engineer
- PL-400 - Microsoft Power Platform Developer
- DP-600 - Implementing Analytics Solutions Using Microsoft Fabric (beta)
- MB-300 - Microsoft Dynamics 365
- MB-230 - Microsoft Dynamics 365 Customer Service Functional Consultant
- AZ-900 - Microsoft Azure Fundamentals
- MD-102 - Endpoint Administrator (beta)
- MB-210 - Microsoft Dynamics 365 for Sales
- AI-102 - Designing and Implementing a Microsoft Azure AI Solution
- DP-900 - Microsoft Azure Data Fundamentals
- SC-400 - Microsoft Information Protection Administrator
- MS-102 - Microsoft 365 Administrator (beta)
- MS-700 - Managing Microsoft Teams
- SC-300 - Microsoft Identity and Access Administrator
- PL-900 - Microsoft Power Platform Fundamentals
- AI-900 - Microsoft Azure AI Fundamentals
- MB-800 - Microsoft Dynamics 365 Business Central Functional Consultant
- AZ-801 - Configuring Windows Server Hybrid Advanced Services
- MB-330 - Microsoft Dynamics 365 Supply Chain Management
- PL-100 - Microsoft Power Platform App Maker
- MB-700 - Microsoft Dynamics 365
- PL-600 - Microsoft Power Platform Solution Architect
- PL-500 - Microsoft Power Automate RPA Developer
- AZ-800 - Administering Windows Server Hybrid Core Infrastructure
- AZ-140 - Configuring and Operating Windows Virtual Desktop on

Amazon



- AWS Certified Advanced Networking - Specialty ANS-C01 - AWS Certified Advanced Networking - Specialty ANS-C01
- AWS Certified Cloud Practitioner - AWS Certified Cloud Practitioner (CLF-C01)
- AWS Certified DevOps Engineer - Professional DOP-C02 - AWS Certified DevOps Engineer - Professional DOP-C02
- AWS Certified Machine Learning - Specialty - AWS Certified Machine Learning - Specialty (MLS-C01)
- AWS Certified Developer Associate - AWS Certified Developer Associate
- AWS Certified Developer - Associate DVA-C02 - AWS Certified Developer - Associate DVA-C02
- AWS Certified Solutions Architect - Professional SAP-C02 - AWS Certified Solutions Architect - Professional SAP-C02
- AWS Certified Security - Specialty SCS-C02 - AWS Certified Security - Specialty SCS-C02
- AWS Certified Solutions Architect - Associate SAA-C03 - AWS Certified Solutions Architect - Associate SAA-C03
- AWS Certified SysOps Administrator - Associate - AWS Certified SysOps Administrator - Associate (SOA-C02)
- AWS Certified Solutions Architect - Professional - AWS Certified Solutions Architect - Professional
- AWS Certified SAP on AWS - Specialty PAS-C01 - AWS Certified SAP on AWS - Specialty PAS-C01
- AWS Certified Security - Specialty - AWS Certified Security - Specialty
- AWS Certified Data Engineer - Associate DEA-C01 - AWS Certified Data Engineer - Associate DEA-C01
- AWS DevOp Engineer Professional - AWS DevOps Engineer - Professional (DOP-C01)
- AWS Certified Cloud Practitioner CLF-C02 - AWS Certified Cloud Practitioner CLF-C02
- AWS Certified Database - Specialty - AWS Certified Database - Specialty
- AWS Certified Data Analytics - Specialty - AWS Certified Data Analytics - Specialty (DAS-C01)

VMware



- 2V0-4123 - VMware NSX 4.x Professional
- 3V0-2121 - Advanced Design VMware vSphere 7.x
- 2V0-3322 - VMware Cloud Professional
- 5V0-2223 - VMware vSAN Specialist v2
- 5V0-3122 - VMware Cloud Foundation Specialist (v2)
- 2V0-2120 - Professional VMware vSphere 7.x
- 2V0-2123 - VMware vSphere 8.x Professional
- 1V0-2120 - Associate VMware Data Center Virtualization

Fortinet

FORTINET

- NSE7_EFW-7.0 - NSE 7 - Enterprise Firewall 7.0
- NSE7_SDW-7.0 - Fortinet NSE 7 - SD-WAN 7.0
- NSE5_FAZ-7.2 - FortiAnalyzer 7.2 Analyst
- NSE5_FCT-7.0 - NSE 5 - FortiClient EMS 7.0
- NSE5_FM-7.2 - Fortinet NSE 5 - FortiManager 7.2
- NSE4_FGT-7.2 - Fortinet NSE 4 - FortiOS 7.2

Oracle

ORACLE

- 1z0-082 - Oracle Database Administration I
- 1z0-808 - Java SE 8 Programmer
- 1z0-083 - Oracle Database Administration II
- 1z0-071 - Oracle Database 12c SQL
- 1z0-1072-23 - Oracle Cloud Infrastructure 2023 Architect Associate

Juniper

JUNIPER

- JN0-104 - Junos, Associate (JNCIA-Junior)
- JN0-649 - Enterprise Routing and Switching, Professional (JNCIP-ENT)
- JN0-664 - Service Provider Routing and Switching, Professional (JNCIP-SP)
- JN0-351 - Enterprise Routing and Switching, Specialist (JNCIS-ENT)
- JN0-231 - Security, Associate (JNCIA-SEC)

Splunk®

splunk®

- SPLK-1002 - Splunk Core Certified Power User
- SPLK-3001 - Splunk Enterprise Security Certified Admin

Cooper

Questions List

● Question #1	15
● Question #2	17
● Question #3	19
● Question #4	21
● Question #5	23
● Question #6	25
● Question #7	28
● Question #8	30
● Question #9	33
● Question #10	35
● Question #11	37
● Question #12	40
● Question #13	41
● Question #14	43
● Question #15	46
● Question #16	48
● Question #17	49
● Question #18	50
● Question #19	52
● Question #20	55
● Question #21	57
● Question #22	59
● Question #23	61
● Question #24	62
● Question #25	63
● Question #26	65
● Question #27	66
● Question #28	68

● Question #29	70
● Question #30	71
● Question #31	73
● Question #32	76
● Question #33	79
● Question #34	81
● Question #35	83
● Question #36	85
● Question #37	86
● Question #38	88
● Question #39	89
● Question #40	91
● Question #41	92
● Question #42	94
● Question #43	97
● Question #44	100
● Question #45	103
● Question #46	105
● Question #47	107
● Question #48	109
● Question #49	110
● Question #50	111
● Question #51	113
● Question #52	115
● Question #53	116
● Question #54	117
● Question #55	119
● Question #56	120
● Question #57	121
● Question #58	123

● Question #59	125
● Question #60	128
● Question #61	131
● Question #62	133
● Question #63	134
● Question #64	136
● Question #65	137
● Question #66	139
● Question #67	141
● Question #68	143
● Question #69	144
● Question #70	145
● Question #71	147
● Question #72	149
● Question #73	151
● Question #74	153
● Question #75	155
● Question #76	156
● Question #77	157
● Question #78	158
● Question #79	159
● Question #80	160
● Question #81	161
● Question #82	163
● Question #83	165
● Question #84	167
● Question #85	168
● Question #86	170
● Question #87	171
● Question #88	172

● Question #89	174
● Question #90	175
● Question #91	176
● Question #92	177
● Question #93	179
● Question #94	181
● Question #95	182
● Question #96	184
● Question #97	185
● Question #98	187
● Question #99	189
● Question #100	191
● Question #101	193
● Question #102	195
● Question #103	197
● Question #104	199
● Question #105	201
● Question #106	202
● Question #107	204
● Question #108	205
● Question #109	207
● Question #110	208
● Question #111	210
● Question #112	212
● Question #113	214
● Question #114	216
● Question #115	217
● Question #116	219
● Question #117	223
● Question #118	225

● Question #119	227
● Question #120	229
● Question #121	230
● Question #122	231
● Question #123	233
● Question #124	235
● Question #125	237
● Question #126	239
● Question #127	240
● Question #128	241
● Question #129	243
● Question #130	245
● Question #131	246
● Question #132	247
● Question #133	249
● Question #134	251
● Question #135	253
● Question #136	255
● Question #137	257
● Question #138	258
● Question #139	259
● Question #140	260
● Question #141	262
● Question #142	264
● Question #143	266
● Question #144	267
● Question #145	269
● Question #146	271
● Question #147	272
● Question #148	273

● Question #149	275
● Question #150	276
● Question #151	277
● Question #152	279
● Question #153	281
● Question #154	283
● Question #155	285
● Question #156	287
● Question #157	289
● Question #158	290
● Question #159	292
● Question #160	293
● Question #161	294
● Question #162	296
● Question #163	298
● Question #164	299
● Question #165	301
● Question #166	302
● Question #167	304
● Question #168	305
● Question #169	307
● Question #170	308
● Question #171	310
● Question #172	313
● Question #173	314
● Question #174	316
● Question #175	318
● Question #176	320
● Question #177	321
● Question #178	322

● Question #179	324
● Question #180	327
● Question #181	328
● Question #182	329
● Question #183	331
● Question #184	333
● Question #185	335
● Question #186	337
● Question #187	339
● Question #188	340
● Question #189	342
● Question #190	343
● Question #191	345
● Question #192	346
● Question #193	348
● Question #194	349
● Question #195	350
● Question #196	352
● Question #197	354
● Question #198	356
● Question #199	358
● Question #200	359
● Question #201	360
● Question #202	362
● Question #203	364
● Question #204	365
● Question #205	367
● Question #206	368
● Question #207	369
● Question #208	370

● Question #209	372
● Question #210	373
● Question #211	376
● Question #212	380
● Question #213	382
● Question #214	384
● Question #215	386
● Question #216	393
● Question #217	395
● Question #218	397
● Question #219	398
● Question #220	400
● Question #221	402
● Question #222	404
● Question #223	406
● Question #224	409
● Question #225	411
● Question #226	413
● Question #227	415
● Question #228	417
● Question #229	419
● Question #230	421
● Question #231	423
● Question #232	424
● Question #233	426
● Question #234	428
● Question #235	430
● Question #236	432
● Question #237	433
● Question #238	434

● Question #239	435
● Question #240	436
● Question #241	438
● Question #242	442
● Question #243	449
● Question #244	456
● Question #245	464
● Question #246	469
● Question #247	476
● Question #248	482
● Question #249	489
● Question #250	495
● Question #251	502
● Question #252	509
● Question #253	514
● Question #254	519
● Question #255	525
● Question #256	532
● Question #257	539
● Question #258	547
● Question #259	554
● Question #260	561
● Question #261	568
● Question #262	575
● Question #263	582
● Question #264	587
● Question #265	591
● Question #266	597
● Question #267	599
● Question #268	600

● Question #269	602
● Question #270	604
● Question #271	605
● Question #272	607
● Question #273	611
● Question #274	612
● Question #275	613
● Question #276	614
● Question #277	615
● Question #278	616
● Question #279	617
● Question #280	619
● Question #281	621
● Question #282	622
● Question #283	624
● Question #284	626
● Question #285	627
● Question #286	629
● Question #287	630
● Question #288	632
● Question #289	633
● Question #290	634
● Question #291	635
● Question #292	636
● Question #293	638
● Question #294	639
● Question #295	640
● Question #296	642
● Question #297	644
● Question #298	645

● Question #299	647
● Question #300	648
● Question #301	649
● Question #302	650
● Question #303	651
● Question #304	652
● Question #305	653
● Question #306	655
● Question #307	656
● Question #308	657
● Question #309	659
● Question #310	663
● Question #311	663
● Question #312	665
● Question #313	666
● Question #314	668
● Question #315	670
● Question #316	671
● Question #317	673
● Question #318	676
● Question #319	683
● Question #320	690
● Question #321	691
● Question #322	693
● Question #323	695
● Question #324	697
● Question #325	700
● Question #326	706
● Question #327	713
● Question #328	718

● Question #329	719
● Question #330	720
● Question #331	721
● Question #332	722
● Question #333	723
● Question #334	725
● Question #335	727
● Question #336	733
● Question #337	739
● Question #338	744
● Question #339	746
● Question #340	748
● Question #341	749
● Question #342	750
● Question #343	752
● Question #344	754
● Question #345	756
● Question #346	757
● Question #347	759
● Question #348	761
● Question #349	762
● Question #350	765
● Question #351	771
● Question #352	777
● Question #353	785
● Question #354	787
● Question #355	788
● Question #356	789
● Question #357	790
● Question #358	792

● Question #359	794
● Question #360	795
● Question #361	796
● Question #362	798
● Question #363	800
● Question #364	801
● Question #365	803
● Question #366	805
● Question #367	807
● Question #368	809
● Question #369	811
● Question #370	813
● Question #371	815
● Question #372	817
● Question #373	818

Microsoft - DP-300 Practice Questions - SecExams.com

SecExams - Focus Only on What's Needed to Pass! - [secexams.com]

Question #1

You have 20 Azure SQL databases provisioned by using the vCore purchasing model.

You plan to create an Azure SQL Database elastic pool and add the 20 databases.

Which three metrics should you use to size the elastic pool to meet the demands of your workload? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) total size of all the databases (Correct Answer)

B) geo-replication support

C) number of concurrently peaking databases * peak CPU utilization per database (Correct Answer)

D) maximum number of concurrent sessions for all the databases

E) total number of databases * average CPU utilization per database (Correct Answer)

Explanation

Correct Answer:

ACE

CE: Estimate the vCores needed for the pool as follows:

For vCore-based purchasing model: MAX(<Total number of DBs X average vCore utilization per DB>, <Number of concurrently peaking DBs X Peak vCore utilization per DB>)

A: Estimate the storage space needed for the pool by adding the number of bytes needed for all the databases in the pool.

Reference:

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

Community Discussion

answer is correct

I prepared for the Microsoft DP-300 test from realexamcollection.com as it has detailed explanation of all the topics which helped me get 940/1000 on the test.

ACE for the vCore - <https://docs.microsoft.com/en-us/azure/azure-sql/database/elastic-pool-overview>

corrected

I meant A,C,E

Question #2

DRAG DROP -

You have SQL Server 2019 on an Azure virtual machine that contains an SSISDB database.

A recent failure causes the master database to be lost.

You discover that all Microsoft SQL Server integration Services (SSIS) packages fail to run on the virtual machine.

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

Select and Place:

Actions	Answer Area
Add a certificate to an Azure key vault	
Enable Transparent Data Encryption (TDE)	
Encrypt a copy of the master key by using the service master key	
Turn on the TRUSTWORTHY property and the CLR property	
Attach the SSISDB database	
Open the master key for the SSISDB database	

Explanation

Correct Answer:

Actions	Answer Area
Add a certificate to an Azure key vault	Attach the SSISDB database
Enable Transparent Data Encryption (TDE)	Turn on the TRUSTWORTHY property and the CLR property
Encrypt a copy of the master key by using the service master key	 Open the master key for the SSISDB database
Turn on the TRUSTWORTHY property and the CLR property	 Encrypt a copy of the master key by using the service master key
Attach the SSISDB database	
Open the master key for the SSISDB database	 

Step 1: Attach the SSISDB database
 Step 2: Turn on the TRUSTWORTHY property and the CLR property
 If you are restoring the SSISDB database to an SQL Server instance where the SSISDB catalog was never created, enable common language runtime (clr)
 Step 3: Open the master key for the SSISDB database
 Restore the master key by this method if you have the original password that was used to create SSISDB. open master key decryption by password = 'LS1Setup!' --'Password used when creating SSISDB'
 Alter Master Key Add encryption by Service Master Key
 Step 4: Encrypt a copy of the master key by using the service master key
 Reference:
<https://docs.microsoft.com/en-us/sql/integration-services/catalog/ssis-catalog>

Community Discussion

The correct url iss: <https://docs.microsoft.com/en-us/sql/integration-services/catalog/ssis-catalog?view=sql-server-ver15#to-restore-the-ssis-database>

1. Attach the SSISDB database (E) 2. Open the master key for the SSISDB database (F) 3. Encrypt a copy of the master key by using the service master key © 4. Turn on the TRUSTWORTHY property and the CLR property (D) turning on the TRUSTWORTHY property and the CLR property (D) should be done after opening the master key for the SSISDB database (F) and encrypting a copy of the master key by using the service master key ©. This is because the TRUSTWORTHY property and CLR property are related to security and encryption, so it's important to ensure that the master key is properly encrypted before enabling these properties.

Odd question.

This is such a weird question, it doesn't address the problem at hand which is a failure causing the master table being deleted. Why would that even happen? I would want to figure that out

Attaching the database and enabling CLR can be done at any order. In this MS documentation, they first enable CLR, then attach/restore the database: <https://docs.microsoft.com/en-us/sql/integration-services/catalog/ssis-catalog?view=sql-server-ver15>

Question #3

You have an Azure SQL database that contains a table named factSales. FactSales contains the columns shown in the following table.

Name	Data type
SalesID	Int
Product	Int
Total Number	Numeric(8,4)
Tax Number	Numeric(8,4)
SalesRep	Varchar(30)

FactSales has 6 billion rows and is loaded nightly by using a batch process. You must provide the greatest reduction in space for the database and maximize performance.

Which type of compression provides the greatest space reduction for the database?

- A) page compression
- B) row compression
- C) columnstore compression
- D) columnstore archival compression (Correct Answer)**

Explanation

Correct Answer:

D

Columnstore tables and indexes are always stored with columnstore compression. You

can further reduce the size of columnstore data by configuring an additional compression called archival compression.

Note: Columnstore The columnstore index is also logically organized as a table with rows and columns, but the data is physically stored in a column-wise data format.

Incorrect Answers:

B: Rowstore The rowstore index is the traditional style that has been around since the initial release of SQL Server.

For rowstore tables and indexes, use the data compression feature to help reduce the size of the database.

C: Columnstore compression is less compressed compared to columnstore archival compression.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/data-compression/data-compression>

Community Discussion

Continued in the same article is this... "Additionally, with a columnstore index, you use partitioning to: Save an additional 30% in storage costs. You can compress older partitions with the COLUMNSTORE_ARCHIVE compression options. The data will be slower for query performance, which is acceptable if the partition is queries infrequently."

Therefore the correct answer is D. The question is weird and should probably not include performance...but this is a nightly process where performance probably doesn't matter much.

Continued in the same article is this... "Additionally, with a columnstore index, you use partitioning to: Save an additional 30% in storage costs. You can compress older partitions with the COLUMNSTORE_ARCHIVE compression options. The data will be slower for query performance, which is acceptable if the partition is queries infrequently."

Therefore the correct answer is D. The question is weird and should probably not include performance...but this is a nightly process where performance probably doesn't matter much.

Selected Answer: D

it is D MS Docs : For columnstore tables and indexes, all columnstore tables and indexes always use columnstore compression and this is not user configurable. Use columnstore archival compression to further reduce the data size for situations when you can afford extra time and CPU resources to store and retrieve the data. You can configure columnstore archival compression.

It seems they added "and maximise performance" to the question, so it should be C?

Question may have been changed recently and now requires "...and maximize performance." Only columnstore compression can achieve both "...greatest reduction in database space and maximize performance." "Columnstore compression typically achieves 10x better compression rates over rowstore indexes. It is the standard compression method for columnstore indexes and enables fast query performance." <https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-design-guidance?view=sql-server-ver16>. Therefore C. appears to be a better answer than D.

Question #4

You have a Microsoft SQL Server 2019 database named DB1 that uses the following database-level and instance-level features.

- ⇒ Clustered columnstore indexes
- ⇒ Automatic tuning
- ⇒ Change tracking
- ⇒ PolyBase

You plan to migrate DB1 to an Azure SQL database.

What feature should be removed or replaced before DB1 can be migrated?

A) Clustered columnstore indexes

B) PolyBase (Correct Answer)

C) Change tracking

D) Automatic tuning

Explanation

Correct Answer:

B

This table lists the key features for PolyBase and the products in which they're available.

Feature	SQL Server (Beginning with 2016)	Azure SQL Database	Azure Synapse Analytics	Parallel Data Warehouse
Query Hadoop data with Transact-SQL	Yes	No	No	Yes
Import data from Hadoop	Yes	No	No	Yes
Export data to Hadoop	Yes	No	No	Yes
Query, import from, export to Azure HDInsight	No	No	No	No
Push down query computations to Hadoop	Yes	No	No	Yes
Import data from Azure Blob storage	Yes	Yes*	Yes	Yes
Export data to Azure Blob storage	Yes	No	Yes	Yes
Import data from Azure Data Lake Store	No	No	Yes	No
Export data to Azure Data Lake Store	No	No	Yes	No
Run PolyBase queries from Microsoft BI tools	Yes	No	Yes	Yes

Incorrect Answers:

C: Change tracking is a lightweight solution that provides an efficient change tracking mechanism for applications. It applies to both Azure SQL Database and SQL Server.

D: Azure SQL Database and Azure SQL Managed Instance automatic tuning provides peak performance and stable workloads through continuous performance tuning based on AI and machine learning.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-versioned-feature-summary>

Community Discussion

Selected Answer: B

B is correct. PolyBase is not supported by Azure SQL Database according to <https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-versioned-feature-summary>

for me this is correct

Selected Answer: B

B is correct

looks correct according to the pic above

Selected Answer: B

B is correct. PolyBase shows Azure SQL Database as not supported. See here: <https://learn.microsoft.com/en-us/sql/relational-databases/polybase/polybase-guide>

Question #5

You have a Microsoft SQL Server 2019 instance in an on-premises datacenter.

The instance contains a 4-TB database named DB1.

You plan to migrate DB1 to an Azure SQL Database managed instance.

What should you use to minimize downtime and data loss during the migration?

- A) distributed availability groups
- B) database mirroring
- C) Always On Availability Group

D) Azure Database Migration Service (Correct Answer)

Explanation

Correct Answer:

D

Azure Database Migration Service can do online migrations with minimal downtime.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/dms-overview>

Community Discussion

D is correct. When you migrate databases to Azure by using Azure Database Migration Service, you can do an offline or an online migration. With an offline migration, application downtime starts when the migration starts. With an online migration, downtime is limited to the time to cut over at the end of migration. We suggest that you test an offline migration to determine whether the downtime is acceptable; if not, do an

online migration. <https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-managed-instance>

yes, its the correct answer!

looks correct . azure SQL Mi support up to 8tb dbs as of today

I think this is correct since this is managed instance that supports Azure Database Migration Service and Native RESTORE DATABASE FROM URL

Selected Answer: D

D is the correct option

Question #6

HOTSPOT -

You have an on-premises Microsoft SQL Server 2016 server named Server1 that contains a database named DB1.

You need to perform an online migration of DB1 to an Azure SQL Database managed instance by using Azure Database Migration Service.

How should you configure the backup of DB1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Backup type:

Full and log backups only
Full backup only
Log backup only

Backup option:

WITH CHECKSUM
WITH NOINIT
WITH UNLOAD

Explanation

Correct Answer:

Answer Area

Backup type:

Full and log backups only
Full backup only
Log backup only

Backup option:

WITH CHECKSUM
WITH NOINIT
WITH UNLOAD

Box 1: Full and log backups only

Make sure to take every backup on a separate backup media (backup files). Azure Database Migration Service doesn't support backups that are appended to a single backup file. Take full backup and log backups to separate backup files.

Box 2: WITH CHECKSUM -

Azure Database Migration Service uses the backup and restore method to migrate your on-premises databases to SQL Managed Instance. Azure Database Migration Service only supports backups created using checksum.

Incorrect Answers:

NOINIT Indicates that the backup set is appended to the specified media set, preserving existing backup sets. If a media password is defined for the media set, the password must be supplied. NOINIT is the default.

UNLOAD -

Specifies that the tape is automatically rewound and unloaded when the backup is finished. UNLOAD is the default when a session begins.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/known-issues-azure-sql-db-managed-instance-online>

Community Discussion

THE ANSWER IS 100% CORRECT @KIET2131 IS WRONG

According to the documentation "Take full, differential and log backups to separate backup files." as part of the requirements.

Backup type: Full backup only Backup option: WITH CHECKSUM

I cannot see any option for taking backup in DMS. It's all about setting up project, setting up source and destination and finally start cutover and update the connection string. Where do you see the taking backups?

How can you make a full backup without logs, which are included automatically? The question is incorrect

Question #7

DRAG DROP -

You have a resource group named App1Dev that contains an Azure SQL Database server named DevServer1. DevServer1 contains an Azure SQL database named DB1. The schema and permissions for DB1 are saved in a Microsoft SQL Server Data Tools (SSDT) database project.

You need to populate a new resource group named App1Test with the DB1 database and an Azure SQL Server named TestServer1. The resources in App1Test must have the same configurations as the resources in App1Dev. 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.

Select and Place:

Actions	Answer Area
Change the Active Directory Admin on TestServer1	
Change the server name and related variables in the templates	
From the database project, deploy the database schema and permissions	
Add IP addresses to the firewall	
From the Azure portal, export the Azure Resource Manager templates	
From the Azure portal, deploy the templates.	

Explanation

Correct Answer:

Actions	Answer Area
Change the Active Directory Admin on TestServer1	From the Azure portal, export the Azure Resource Manager templates
Change the server name and related variables in the templates	Change the server name and related variables in the templates
From the database project, deploy the database schema and permissions	From the Azure portal, deploy the templates.
Add IP addresses to the firewall	From the database project, deploy the database schema and permissions
From the Azure portal, export the Azure Resource Manager templates	
From the Azure portal, deploy the templates.	

Community Discussion

SecExams

the answer is corrected

Re-Write answer here FYI. 1. From the Azure Portal, export the Azure Resource Manager templates. 2. Change the server name and related variables in the templates. 3. From the Azure portal, deploy the templates. 4. From the database project, deply the database schema and permissions.

Thank you

Thank you

the answer is corrected

Question #8

HOTSPOT -

You have an Azure Synapse Analytics dedicated SQL pool named Pool1 and an Azure Data Lake Storage Gen2 account named Account1.

You plan to access the files in Account1 by using an external table.

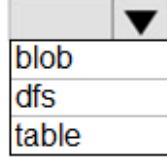
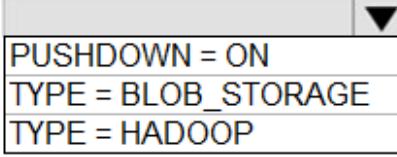
You need to create a data source in Pool1 that you can reference when you create the external table.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
CREATE EXTERNAL DATA SOURCE source1  
WITH  
( LOCATION = 'https://account1..core.windows.net' ,  
blob  
dfs  
table  
  
  
PUSHDOWN = ON  
TYPE = BLOB_STORAGE  
TYPE = HADOOP  
)
```

Explanation

Correct Answer:

Answer Area

```
CREATE EXTERNAL DATA SOURCE source1
WITH
( LOCATION = 'https://account1.blob.core.windows.net',
  [ blob
  , dfs
  , table ]
)
)
```

Box 1: dfs -

For Azure Data Lake Store Gen 2 used the following syntax:

http[s] <storage_account>.dfs.core.windows.net/<container>/subfolders

Incorrect:

Not blob: blob is used for Azure Blob Storage. Syntax:

http[s] <storage_account>.blob.core.windows.net/<container>/subfolders

Box 2: TYPE = HADOOP -

Syntax for CREATE EXTERNAL DATA SOURCE.

External data sources with TYPE=HADOOP are available only in dedicated SQL pools.

CREATE EXTERNAL DATA SOURCE <data_source_name>

WITH -

```
( LOCATION = '<prefix>://<path>'
[, CREDENTIAL = <database scoped credential> ]
, TYPE = HADOOP
)
[]
```

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables>

Community Discussion

dfs hadoop

Question FOR DP-203 , Not For DBA (DP-300) And the answer is wrong

datalake gen2 is dfs. <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables?tabs=hadoop#create-external-data-source>

datalake gen2 is dfs. <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables?tabs=hadoop#create-external-data-source>

This question is related to the DP-203 exam.

Question #9

HOTSPOT -

You plan to develop a dataset named Purchases by using Azure Databricks.

Purchases will contain the following columns:

- ⇒ ProductID
- ⇒ ItemPrice
- ⇒ LineTotal
- ⇒ Quantity
- ⇒ StoreID
- ⇒ Minute
- ⇒ Month
- ⇒ Hour
- ⇒ Year
- ⇒ Day

You need to store the data to support hourly incremental load pipelines that will vary for each StoreID. The solution must minimize storage costs.

How should you complete the code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
df.write  
.bucketBy  
.partitionBy  
range  
.sortBy  
.mode ("append")
```

```
(*  
("StoreID", "Hour")  
("StoreID", "Year", "Month", "Day", "Hour")  
("Year", "Month", "Day", "Hour", "StoreID")
```

```
.csv("/Purchases")  
.json("/Purchases")  
.parquet("/Purchases")  
.saveAsTable("/Purchases")
```

Explanation

Correct Answer:

Answer Area

```
df.write  
.partitionBy  
.mode ("append")
```

(“*”)
(“StoreID”, “Hour”)
(“StoreID”, “Year”, “Month”, “Day”, “Hour”)
(“Year”, “Month”, “Day”, “Hour” “StoreID”)

```
.csv("/Purchases")  
.json("/Purchases")  
.parquet("/Purchases")  
.saveAsTable("/Purchases")
```

Box 1: .partitionBy -

Example:

```
df.write.partitionBy("y","m","d")  
.mode(SaveMode.Append)  
.parquet("/data/hive/warehouse/db_name.db/" + tableName)
```

Box 2: ("Year","Month","Day","Hour","StoreID")

Box 3: .parquet("/Purchases")

Reference:

<https://intellipaat.com/community/11744/how-to-partition-and-write-dataframe-in-spark-without-deleting-partitions-with-no-new-data>

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

.partitionBy ("StoreID", "Year","Month","Day","Hour") or ("StoreID", "Hour") .parquet("/ Purchases") // The problem is that ("StoreID", "Year","Month","Day","Hour") and ("Year","Month","Day","Hour", "StoreID") are basically the same // ("StoreID", "Hour") or even better ("StoreID") (not on the list) are also good. The problem is that you would have to keep offset of the last read // I would choose ("StoreID", "Year","Month","Day","Hour") because it is the cleanest

Answer should be ("StoreID","Year","Month","Day","Hour") and this indeed a question from DP-203 (recently passed this one)

Answer should be ("StoreID","Year","Month","Day","Hour") and this indeed a question from DP-203 (recently passed this one)

Answer should be ("StoreID","Year","Month","Day","Hour") and this indeed a question from DP-203 (recently passed this one)

Question #10

You are designing a streaming data solution that will ingest variable volumes of data.

You need to ensure that you can change the partition count after creation.
Which service should you use to ingest the data?

- A) Azure Event Hubs Standard
- B) Azure Stream Analytics
- C) Azure Data Factory

D) Azure Event Hubs Dedicated (Correct Answer)

Explanation

Correct Answer:

D

The partition count for an event hub in a dedicated Event Hubs cluster can be increased after the event hub has been created.

Incorrect Answers:

A: For Azure Event standard hubs, the partition count isn't changeable, so you should consider long-term scale when setting partition count.

Reference:

<https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-features#partitions>

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

Selected Answer: D

The number of partitions is specified at creation and must be between 1 and 32. The partition count isn't changeable in all tiers except the dedicated tier, so you should consider long-term scale when setting partition count. <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-faq>

The answer looks right

The answer looks right

Correct: D <https://learn.microsoft.com/en-us/azure/event-hubs/event-hubs-quotas>

Question #11

HOTSPOT -

You are building a database in an Azure Synapse Analytics serverless SQL pool.

You have data stored in Parquet files in an Azure Data Lake Storage Gen2 container.

Records are structured as shown in the following sample.

```
{  
    "id":123,  
    "address_housenumber": "19c",  
    "address_line1": "Memory Lane",  
    "applicant1_name": "Jane",  
    "applicant2_name": "Dev"  
}
```

The records contain two applicants at most.

You need to build a table that includes only the address fields.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
▼ applications  
CREATE EXTERNAL TABLE  
CREATE TABLE  
CREATE VIEW  
  
WITH (  
    LOCATION = 'applications/',  
    DATA_SOURCE = applications_ds,  
    FILE_FORMAT = applications_file_format  
)  
AS  
SELECT id, [address_housenumber] as addressnumber, [address_line1]  
as addressline1  
FROM  
▼ (BULK 'https://contosol1.dfs.core.windows.net/  
applications/year=/*/*.parquet',  
CROSS APPLY  
OPENJSON  
OPENROWSET  
FORMAT = 'PARQUET') AS [r]  
GO
```

Explanation

Correct Answer:

Answer Area

```
applications
CREATE EXTERNAL TABLE
CREATE TABLE
CREATE VIEW
WITH (
    LOCATION = 'applications/',
    DATA_SOURCE = applications_ds,
    FILE_FORMAT = applications_file_format
)
AS
SELECT id, [address_housenumber] as addressnumber, [address_line1]
as addressline1
FROM
(BULK 'https://contosol.dfs.core.windows.net/
applications/year=/*/*.parquet',
CROSS APPLY
OPENJSON
OPENROWSET
        FORMAT = 'PARQUET') AS [r]
GO
```

Box 1: CREATE EXTERNAL TABLE -

An external table points to data located in Hadoop, Azure Storage blob, or Azure Data Lake Storage. External tables are used to read data from files or write data to files in Azure Storage. With Synapse SQL, you can use external tables to read external data using dedicated SQL pool or serverless SQL pool.

Syntax:

```
CREATE EXTERNAL TABLE { database_name.schema_name.table_name |
schema_name.table_name | table_name }
( <column_definition> [ ,...n ] )
WITH (
    LOCATION = 'folder_or_filepath',
    DATA_SOURCE = external_data_source_name,
    FILE_FORMAT = external_file_format_name
```

Box 2. OPENROWSET -

When using serverless SQL pool, CETAS is used to create an external table and export query results to Azure Storage Blob or Azure Data Lake Storage Gen2.

Example:

AS -

```
SELECT decennialTime, stateName, SUM(population) AS population  
  
FROM -  
OPENROWSET(BULK 'https://azureopendatastorage.blob.core.windows.net/  
censusdatacontainer/release/us_population_county/year=/*/*.parquet',  
FORMAT='PARQUET') AS [r]  
GROUP BY decennialTime, stateName  
  
GO -  
Reference:  
https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-tables-external-tables
```

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

The DP-300 exam engine has been updated and some questions also cover Azure Data engineering side. You don't have to repeat the same statement for each question.

The DP-300 exam engine has been updated and some questions also cover Azure Data engineering side. You don't have to repeat the same statement for each question.

I don't seen any mention of Synapse Analytics, Databricks InsightsHD or Azure Data Factory in the Skills Outline on the DP-300 even with the incoming update to the questions Nov 24th 2021. Where have you got this information from?

I don't seen any mention of Synapse Analytics, Databricks InsightsHD or Azure Data Factory in the Skills Outline on the DP-300 even with the incoming update to the questions Nov 24th 2021. Where have you got this information from?

Question #12

You have an Azure Synapse Analytics Apache Spark pool named Pool1. You plan to load JSON files from an Azure Data Lake Storage Gen2 container into the tables in Pool1. The structure and data types vary by file. You need to load the files into the tables. The solution must maintain the source data types. What should you do?

A) Load the data by using PySpark. (Correct Answer)

- B) Load the data by using the OPENROWSET Transact-SQL command in an Azure Synapse Analytics serverless SQL pool.
- C) Use a Get Metadata activity in Azure Data Factory.
- D) Use a Conditional Split transformation in an Azure Synapse data flow.

Explanation

Correct Answer:

A

Synapse notebooks support four Apache Spark languages:
PySpark (Python)
Spark (Scala)

Spark SQL -

.NET Spark (C#)

Note: Bring data to a notebook.

You can load data from Azure Blob Storage, Azure Data Lake Store Gen 2, and SQL pool as shown in the code samples below.

```
Read a CSV from Azure Data Lake Store Gen2 as a Spark DataFrame.  
from pyspark.sql  
import SparkSession  
from pyspark.sql.types import *  
account_name = "Your account name"  
container_name = "Your container name"  
relative_path = "Your path"  
adls_path = 'abfss://%s@%s.dfs.core.windows.net/%s' % (container_name, account_name,  
relative_path)  
df1 = spark.read.option('header', 'true') \  
.option('delimiter', ',') \  
.csv(adls_path + '/Testfile.csv')
```

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/spark/apache-spark-development-using-notebooks>

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

we get it ,you've made your point..... no need to have the same comment for every question .

we get it ,you've made your point..... no need to have the same comment for every question .

Answer is A If you want to load into Spark pool then use Spark itself OPENROWSET is for the source, here the issue is the target meaning Spark

Maybe to indicate that this exact question is for other exam?

Question #13

You are designing a date dimension table in an Azure Synapse Analytics dedicated SQL pool. The date dimension table will be used by all the fact tables.

Which distribution type should you recommend to minimize data movement?

- A) HASH
- B) REPLICATE (Correct Answer)**
- C) ROUND_ROBIN

Explanation

Correct Answer:

B

A replicated table has a full copy of the table available on every Compute node. Queries run fast on replicated tables since joins on replicated tables don't require data movement. Replication requires extra storage, though, and isn't practical for large tables.

Incorrect Answers:

C: A round-robin distributed table distributes table rows evenly across all distributions. The assignment of rows to distributions is random. Unlike hash-distributed tables, rows with equal values are not guaranteed to be assigned to the same distribution. As a result, the system sometimes needs to invoke a data movement operation to better organize your data before it can resolve a query.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute>

Community Discussion

It's a question for DP-203 !!

I think it's okay to tag the question as one from DP-203 - we don't have time to waste on questions that are not part of DP-300 objectives.

I think it's okay to tag the question as one from DP-203 - we don't have time to waste on questions that are not part of DP-300 objectives.

I think it's okay to tag the question as one from DP-203 - we don't have time to waste on questions that are not part of DP-300 objectives.

I think it's okay to tag the question as one from DP-203 - we don't have time to waste on questions that are not part of DP-300 objectives.

Question #14

HOTSPOT -

From a website analytics system, you receive data extracts about user interactions such as downloads, link clicks, form submissions, and video plays. The data contains the following columns:

Name	Sample value
Date	15 Jan 2021
EventCategory	Videos
EventAction	Play
EventLabel	Contoso Promotional
ChannelGrouping	Social
TotalEvents	150
UniqueEvents	120
SessionsWithEvents	99

You need to design a star schema to support analytical queries of the data. The star schema will contain four tables including a date dimension.

To which table should you add each column? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

EventCategory:

DimChannel
DimDate
DimEvent
FactEvents

ChannelGrouping:

DimChannel
DimDate
DimEvent
FactEvents

TotalEvents:

DimChannel
DimDate
DimEvent
FactEvents

Explanation

Correct Answer:

Answer Area

EventCategory:

DimChannel
DimDate
DimEvent
FactEvents

ChannelGrouping:

DimChannel
DimDate
DimEvent
FactEvents

TotalEvents:

DimChannel
DimDate
DimEvent
FactEvents

Box 1: DimEvent -

Box 2: DimChannel -

Dimension tables describe business entities – the things you model. Entities can include products, people, places, and concepts including time itself. The most consistent table you'll find in a star schema is a date dimension table. A dimension table contains a key column (or columns) that acts as a unique identifier, and descriptive columns.

Box 3: FactEvents -

Fact tables store observations or events, and can be sales orders, stock balances, exchange rates, temperatures, etc.

Reference:

<https://docs.microsoft.com/en-us/power-bi/guidance/star-schema>

Community Discussion

Dimension tables support filtering and grouping, Fact tables support summarization, so the correct answer is: DimEvent, DimChannel, FactEvents.

Answer is incorrect. The correct answer is: DimEvent, DimChannel, FactEvents

This is a DP-203 question.

DimEvent DimChannel FactEvents

From my opinion 1 and 3 are opposite - Fact is number of events and Event category is DimEvent.

Question #15

DRAG DROP -

You plan to create a table in an Azure Synapse Analytics dedicated SQL pool. Data in the table will be retained for five years. Once a year, data that is older than five years will be deleted.

You need to ensure that the data is distributed evenly across partitions. The solutions must minimize the amount of time required to delete old data.

How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value 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.

NOTE: Each correct selection is worth one point.

Select and Place:

SecExams

Values	Answer Area
CustomerKey	<code>CREATE TABLE [dbo].[FactSales]</code>
HASH	<code>(</code>
ROUND_ROBIN	<code>[ProductKey] int NOT NULL</code>
REPLICATE	<code>, [OrderDateKey] int NOT NULL</code>
OrderDateKey	<code>, [CustomerKey] int NOT NULL</code>
SalesOrderNumber	<code>, [SalesOrderNumber] nvarchar (20) NOT NULL</code>
	<code>, [OrderQuantity] smallint NOT NULL</code>
	<code>, [UnitPrice] money NOT NULL</code>
	<code>)</code>
	<code>WITH</code>
	<code> CLUSTERED COLUMNSTORE INDEX</code>
	<code>, DISTRIBUTION = </code> [] <code>([ProductKey])</code>
	<code>, PARTITION ([] RANGE RIGHT FOR VALUES</code>
	<code> (20170101, 20180101, 20190101, 20200101, 20210101)</code>
	<code>)</code>
	<code>)</code>

Explanation

Correct Answer:

Box 1: HASH -

Box 2: OrderDateKey -

In most cases, table partitions are created on a date column.

A way to eliminate rollbacks is to use Metadata Only operations like partition switching for data management. For example, rather than execute a DELETE statement to delete all rows in a table where the `order_date` was in October of 2001, you could partition your data early. Then you can switch out the partition with data for an empty partition from another table.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-azure-sql-data-warehouse> <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/best-practices-dedicated-sql-pool>

Community Discussion

The provided answer is correct.

This is a DP-203 question.

(distribution_column_name) is only available in HASH <https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-azure-sql-data-warehouse?view=aps-pdw-2016-au7>

Is this a DP-300 question?

I agree. Here is an example from MS: CREATE TABLE myTable (l_orderkey bigint, l_partkey
bigint, l_suppkey bigint, l_shipinstruct char(25), l_shipmode char(10), l_comment

```
varchar(44)) WITH ( DISTRIBUTION = HASH (l_orderkey), CLUSTERED COLUMNSTORE INDEX,
PARTITION ( l_shipdate RANGE RIGHT FOR VALUES (
'1992-01-01','1992-02-01','1992-03-01','1992-04-01','1992-05-01',
'1992-06-01','1992-07-01','1992-08-01','1992-09-01','1992-10-01',
'1992-11-01','1992-12-01','1993-01-01','1993-02-01','1993-03-01' )) );
```

Question #16

You have an Azure Synapse Analytics workspace named WS1 that contains an Apache Spark pool named Pool1.

You plan to create a database named DB1 in Pool1.

You need to ensure that when tables are created in DB1, the tables are available automatically as external tables to the built-in serverless SQL pool.

Which format should you use for the tables in DB1?

- A) JSON
- B) CSV
- C) Parquet (Correct Answer)**
- D) ORC

Explanation

Correct Answer:

C

Serverless SQL pool can automatically synchronize metadata from Apache Spark. A serverless SQL pool database will be created for each database existing in serverless Apache Spark pools.

For each Spark external table based on Parquet and located in Azure Storage, an external table is created in a serverless SQL pool database. As such, you can shut down your Spark pools and still query Spark external tables from serverless SQL pool.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-storage-files-spark-tables>

Community Discussion

Azure Synapse is not part of DP-300

Yes, The Answer is correct.

Yes, The Answer is correct.

Actually , both B/CSV and C/Parquet are correct, because for each Spark external table based on Parquet or CSV and located in Azure Storage, an external table is created in a serverless SQL pool database.

For each Spark external table based on Parquet or CSV and located in Azure Storage, an external table is created in a serverless SQL pool database. As such, you can shut down your Spark pools and still query Spark external tables from serverless SQL pool.

Question #17

You are designing an anomaly detection solution for streaming data from an Azure IoT hub. The solution must meet the following requirements:

- ⇒ Send the output to an Azure Synapse.
- ⇒ Identify spikes and dips in time series data.
- ⇒ Minimize development and configuration effort.

Which should you include in the solution?

- A) Azure SQL Database
- B) Azure Databricks

C) Azure Stream Analytics (Correct Answer)

Explanation

Correct Answer:

C

Anomalies can be identified by routing data via IoT Hub to a built-in ML model in Azure Stream Analytics

Reference:

<https://docs.microsoft.com/en-us/learn/modules/data-anomaly-detection-using-azure-iot-hub/> <https://docs.microsoft.com/en-us/azure/stream-analytics/azure-synapse-analytics-output>

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

ANSWER CORRECT: Azure Stream Analytics Azure Stream Analytics Job - To create an Azure Stream Analytics job, follow the steps in the Get started using Azure Stream Analytics tutorial to: Create an Event Hub input Configure and start event generator application Provision a Stream Analytics job Specify job input and query Dedicated SQL pool - To create a new dedicated SQL pool, follow the steps in the Quickstart: Create a dedicated SQL pool. Specify streaming output to point to your dedicated SQL pool

a lot of questions are not for DP-300. More for Data Engineer or Data Analytics

Selected Answer: C

See gt002's explanation.

Question #18

You are creating a new notebook in Azure Databricks that will support R as the primary language but will also support Scala and SQL.

Which switch should you use to switch between languages?

- A) \\[<language>]
- B) %<language> (Correct Answer)**
- C) \\[<language>]
- D) @<language>

Explanation

Correct Answer:

B

You can override the default language by specifying the language magic command %<language> at the beginning of a cell. The supported magic commands are: %python, %r, %scala, and %sql.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/notebooks/notebooks-use>

Community Discussion

Question FOR DP-203 , Not For DBA (DP-300)

Answer is %<language>

Are we sure that these questions do not appear in DP-300?

Selected Answer: B

%<language>

Question #19

DRAG DROP -

You are creating a managed data warehouse solution on Microsoft Azure. You must use PolyBase to retrieve data from Azure Blob storage that resides in parquet format and load the data into a large table called FactSalesOrderDetails.

You need to configure Azure Synapse Analytics to receive the data.

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.

Select and Place:

Actions	Answer Area
Create an external data source for Azure Blob storage.	
Create a master key on database.	
Enable Transparent Data Encryption.	
Create the external table FactSalesOrderDetails.	
Load the data to a staging table.	
Create an external file format to map the parquet files.	

Explanation

Correct Answer:

Actions**Answer Area**

Create an external data source for Azure Blob storage.

Create a master key on database.

Create a master key on database.

Create an external data source for Azure Blob storage.

Enable Transparent Data Encryption.

Create an external file format to map the parquet files.



Create the external table FactSalesOrderDetails.

Create the external table FactSalesOrderDetails.



Load the data to a staging table.

Create an external file format to map the parquet files.

To query the data in your Hadoop data source, you must define an external table to use in Transact-SQL queries. The following steps describe how to configure the external table.

Step 1: Create a master key on database.

1. Create a master key on the database. The master key is required to encrypt the credential secret.

(Create a database scoped credential for Azure blob storage.)

Step 2: Create an external data source for Azure Blob storage.

2. Create an external data source with CREATE EXTERNAL DATA SOURCE..

Step 3: Create an external file format to map the parquet files.

3. Create an external file format with CREATE EXTERNAL FILE FORMAT.

Step 4. Create an external table FactSalesOrderDetails

4. Create an external table pointing to data stored in Azure storage with CREATE EXTERNAL TABLE.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-configure-azure-blob-storage>

Community Discussion

Question not for DP-300 exam.

answer is correct. below video illustrate that: <https://youtu.be/-DjOsJslA4?t=1266>

Why dont you find out for yourself, and let us know.

its correct.

Why dont you find out for yourself, and let us know.

Question #20

HOTSPOT -

You configure version control for an Azure Data Factory instance as shown in the following exhibit.

The screenshot shows the 'Git repository' configuration page for an Azure Data Factory. On the left, there's a sidebar with icons for Connections, Linked services, Integration runtimes, Azure Purview (Preview), Source control (selected), Git configuration, ARM template, Parameterization template, Author, Triggers, Global parameters, Security, Customer managed key, and Managed private endpoints. The main panel has a title 'Git repository' and a sub-section 'Setting'. It shows the 'Repository type' as 'Azure DevOps Git', 'Azure DevOps Account' as 'CONTOSO', 'Project name' as 'Data', 'Repository name' as 'dwh_batchetl', 'Collaboration branch' as 'main', 'Publish branch' as 'adf_publish', and 'Root folder' as '/'. There are also 'Setting' and 'Disconnect' buttons.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Azure Resource Manager (ARM) templates
for the pipeline assets as stored in

/
adf_publish
main
Parameterization template

A Data Factory Azure Resource Manager
(ARM) template named contososales
can be found in

/contososales
/dwh_batchetl/adf_publish/contososales
/main

Explanation

Correct Answer:

Answer Area

Azure Resource Manager (ARM) templates for the pipeline assets as stored in

/
adf_publish
main
Parameterization template

A Data Factory Azure Resource Manager (ARM) template named contososales can be found in

/contososales
/dwh_batchlet/adf_publish/contososales
/main

Box 1: adf_publish -

By default, data factory generates the Resource Manager templates of the published factory and saves them into a branch called adf_publish. To configure a custom publish branch, add a publish_config.json file to the root folder in the collaboration branch. When publishing, ADF reads this file, looks for the field publishBranch, and saves all Resource Manager templates to the specified location. If the branch doesn't exist, data factory will automatically create it. An example of what this file looks like is below:

```
{  
  "publishBranch": "factory/adf_publish"  
}
```

Box 2: /dwh_barchlet/ adf_publish/contososales

RepositoryName: Your Azure Repos code repository name. Azure Repos projects contain Git repositories to manage your source code as your project grows. You can create a new repository or use an existing repository that's already in your project.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/source-control>

Community Discussion

Yea it is, I checked the reference!

Yea it is, I checked the reference!

Azure Data Factory is out of scope of the DP-300 exam.

This is a DP-203 question.

Is it correct?

Question #21

You plan to build a structured streaming solution in Azure Databricks. The solution will count new events in five-minute intervals and report only events that arrive during the interval.

The output will be sent to a Delta Lake table.

Which output mode should you use?

A) complete (Correct Answer)

- B) append
- C) update

Explanation

Correct Answer:

A

Complete mode: You can use Structured Streaming to replace the entire table with every batch.

Incorrect Answers:

B: By default, streams run in append mode, which adds new records to the table.

Reference:

<https://docs.databricks.com/delta/delta-streaming.html>

Community Discussion

This is a DP-203 question.

Solution is 'Complete'. The Question stated - "will count new events in five-minute intervals and report only events that arrive during the interval. - Says 'NEW' events and 'ONLY ARRIVE DURING THE 5min INTERVAL' - so it can't be append because that would just add new data to the old data.

Selected Answer: B

It is from DP-203 but correct answer is 'Append'

Selected Answer: B

The answer is append

Selected Answer: A

The preceding example continuously updates a table that contains the aggregate number of events by customer.

Question #22

HOTSPOT -

You are performing exploratory analysis of bus fare data in an Azure Data Lake Storage Gen2 account by using an Azure Synapse Analytics serverless SQL pool. You execute the Transact-SQL query shown in the following exhibit.

```
SELECT
    payment_type,
    SUM(fare_amount) AS fare_total
FROM OPENROWSET(
    BULK 'csv/busfare/tripdata_2020*.csv',
    DATA_SOURCE = 'BusData',
    FORMAT = 'CSV', PARSER_VERSION = '2.0',
    FIRSTROW = 2
)
WITH (
    payment_type INT 10,
    fare_amount FLOAT 11
) AS nyc
GROUP BY payment_type
ORDER BY payment_type;
```

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

Hot Area:

Answer Area

The query results include only [answer choice] in the csv/busfare folder.

▼
CSV files in the tripdata_2020 subfolder
files that have file names beginning with "tripdata_2020"
CSV files that have file names containing "tripdata_202"
CSV files that have file named beginning with "tripdata_2020"

The query assumes that the first row in a CSV file is [answer choice] row.

▼
a header
a data
an empty

Explanation

Correct Answer:

Answer Area

The query results include only **[answer choice]** in the csv/busfare folder.

CSV files in the tripdata_2020 subfolder
files that have file names beginning with "tripdata_2020"
CSV files that have file names containing "tripdata_202"
CSV files that have file named beginning with "tripdata_2020"

The query assumes that the first row in a CSV file is **[answer choice]** row.

a header
a data
an empty

Box 1: CSV files that have file named beginning with "tripdata_2020"

Box 2: a header -

FIRSTROW = 'first_row'

Specifies the number of the first row to load. The default is 1 and indicates the first row in the specified data file. The row numbers are determined by counting the row terminators. FIRSTROW is 1-based.

Example: Option firstrow is used to skip the first row in the CSV file that represents header in this case (firstrow=2). select top 10 * from openrowset(bulk 'https://pandemicdatalake.blob.core.windows.net/public/curated/covid-19/ecdc_cases/latest/ecdc_cases.csv', format = 'csv', parser_version = '2.0', firstrow = 2) as rows

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/develop-openrowset>

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/query-single-csv-file>

Community Discussion

This is a DP-203 question.

The provided answer is correct.

the query stated to start from 2nd row, so the first row should be header (and therefore discarded) and 2nd the data - just my opinion

the query stated to start from 2nd row, so the first row should be header (and therefore discarded) and 2nd the data - just my opinion

Exam DP-203: Data Engineering on Microsoft Azure

Question #23

You have a SQL pool in Azure Synapse that contains a table named dbo.Customers. The table contains a column name Email.

You need to prevent nonadministrative users from seeing the full email addresses in the Email column. The users must see values in a format of [\[email protected\]](#) instead.

What should you do?

- A) From the Azure portal, set a mask on the Email column.
- B) From the Azure portal, set a sensitivity classification of Confidential for the Email column.

C) From Microsoft SQL Server Management Studio, set an email mask on the Email column. (Correct Answer)

- D) From Microsoft SQL Server Management Studio, grant the SELECT permission to the users for all the columns in the dbo.Customers table except Email.

Explanation

Correct Answer:

C

The Email masking method, which exposes the first letter and replaces the domain with XXX.com using a constant string prefix in the form of an email address.

Example: [\[email protected\]](#) -

Incorrect:

Not A: The Email mask feature cannot be set using portal for Azure Synapse (use PowerShell or REST API) or SQL Managed Instance.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/dynamic-data-masking-overview>

Community Discussion

Selected Answer: A

correct answer is A: you need to mask the email.

The correct answer is A

Yep A You set up a dynamic data masking policy in the Azure portal by selecting the Dynamic Data Masking blade under Security in your SQL Database configuration pane. This feature cannot be set using portal for SQL Managed Instance. For more information, see Dynamic Data Masking. <https://docs.microsoft.com/en-us/azure/azure-sql/database/dynamic-data-masking-overview>

Yep A You set up a dynamic data masking policy in the Azure portal by selecting the Dynamic Data Masking blade under Security in your SQL Database configuration pane. This feature cannot be set using portal for SQL Managed Instance. For more information, see Dynamic Data Masking. <https://docs.microsoft.com/en-us/azure/azure-sql/database/dynamic-data-masking-overview>

This is a DP-203 question. Azure Synapse Analytics is not part of the DP-300 curriculum.

Question #24

You have an Azure Databricks workspace named **workspace1** in the Standard pricing tier. **Workspace1** contains an all-purpose cluster named **cluster1**. You need to reduce the time it takes for **cluster1** to start and scale up. The solution must minimize costs.

What should you do first?

- A) Upgrade **workspace1** to the Premium pricing tier.
- B) Configure a global init script for **workspace1**.
- C) Create a pool in **workspace1**. (Correct Answer)**
- D) Create a cluster policy in **workspace1**.

Explanation

Correct Answer:

C

You can use Databricks Pools to Speed up your Data Pipelines and Scale Clusters Quickly. Databricks Pools, a managed cache of virtual machine instances that enables clusters to start and scale 4 times faster.

Reference:

<https://databricks.com/blog/2019/11/11/databricks-pools-speed-up-data-pipelines.html>

Community Discussion

Exam DP-203: Data Engineering on Microsoft Azure

looks correct

its correct.

its correct.

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.

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1.

You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: In an Azure Synapse Analytics pipeline, you use a Get Metadata activity that retrieves the DateTime of the files.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

You can use the Get Metadata activity to retrieve the metadata of any data in Azure Data Factory or a Synapse pipeline. You can use the output from the Get Metadata activity in conditional expressions to perform validation, or consume the metadata in subsequent activities.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/control-flow-get-metadata-activity>

Community Discussion

This is a DP-203 question.

Selected Answer: A

Yes, Get Metadata can be used to retrieve the DateTime of the files and allow you to use this data. The question is to add it to Table1, not to an external table.

Get Metadata activity retrieves the DateTime of the files but it does not create a column in Table1, so answer is B

Answer looks correct

Using a Get Metadata activity in an Azure Synapse Analytics pipeline to retrieve the DateTime of the files will not directly ensure that the DateTime is stored as an additional column in Table1. The Get Metadata activity only retrieves metadata information about the files, such as their names, size, and date created or modified. To achieve the goal of storing the DateTime as an additional column in Table1, you would need to use other pipeline activities, such as a Data Flow or a Copy activity, to extract data from the files, transform it as necessary, and load it into Table1. During this process, you could use derived columns or mappings to add the DateTime column and populate it with the appropriate values. Therefore, B is the correct answer.

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.

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1.

You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: You use an Azure Synapse Analytics serverless SQL pool to create an external table that has an additional DateTime column.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

This is not about an external table.

Instead, in an Azure Synapse Analytics pipeline, you use a Get Metadata activity that retrieves the DateTime of the files.

Note: You can use the Get Metadata activity to retrieve the metadata of any data in Azure Data Factory or a Synapse pipeline. You can use the output from the Get Metadata activity in conditional expressions to perform validation, or consume the metadata in subsequent activities.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/control-flow-get-metadata-activity>

Community Discussion

Answer looks correct

Selected Answer: B

No, Get Metadata can be used to retrieve the DateTime of the files and allow you to use this data. The question is to add it to Table1, not to an external table.

This is a DP-203 question.

Exam DP-203: Data Engineering on Microsoft Azure

this is not for DP-300 exam



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 an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1.

You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: You use a dedicated SQL pool to create an external table that has an additional DateTime column.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Instead, in an Azure Synapse Analytics pipeline, you use a Get Metadata activity that retrieves the DateTime of the files.

Note: You can use the Get Metadata activity to retrieve the metadata of any data in Azure Data Factory or a Synapse pipeline. You can use the output from the Get Metadata activity in conditional expressions to perform validation, or consume the metadata in subsequent activities.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/control-flow-get-metadata-activity>

Community Discussion

Azure Synapse Analytics is NOT part of DP-300

Exactly. Too many questions here are for DP-203

Exactly. Too many questions here are for DP-203

The answer looks right

Exam DP-203: Data Engineering on Microsoft Azure

Question #28

HOTSPOT -

You are provisioning an Azure SQL database in the Azure portal as shown in the following exhibit.

Compute Hardware
Click "Change configuration" to see details for all hardware generations available including memory optimized and compute optimized options

Hardware Configuration
Gen5
up to 40 vCores, up to 120 GB memory
[Change configuration](#)

Max vCores
6 vCores

Min vCores
0.75 vCores

Cost summary
Gen5 - General Purpose (GP_5, Gen5_0)
Cost per GB (in USD) 0.12
Max storage selected (in GB) x 1040
ESTIMATED STORAGE COST / MONTH 119.60 USD
COMPUTE COST / VCORE / SECOND¹ 0.000145 USD

NOTES
¹ Serverless databases are billed in vCores based on a combination of CPU and memory utilization. [Learn more about serverless billing](#)

Auto-pause delay
The database automatically pauses if it is inactive for the time period specified here, and automatically resumes when database activity recurs.
Alternatively, auto-pausing can be disabled.

Enable auto-pause
Days 0 Hours 4 Minutes 0

Data max size
1 GB 800 GB 1.5 TB 800 GB
240 GB LOG SPACE ALLOCATED

Apply

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

After four hours of inactivity, the database requires [answer choice] to resume operations for new activities.

no extra time
up to 10 minutes
up to one minute

The database configuration reduces the cost of [answer choice] usage patterns.

intermittent and unpredictable
regular and high
steady and low

Explanation

Correct Answer:

Answer Area

After four hours of inactivity, the database requires [answer choice] to resume operations for new activities.

no extra time
up to 10 minutes
up to one minute

The database configuration reduces the cost of [answer choice] usage patterns.

intermittent and unpredictable
regular and high
steady and low

Box 1: no extra time -

Auto Pause is not checked in the exhibit.

Note: If Auto Pause is checked the correct answer is: up to one minute

Box 2: intermittent and unpredictable

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview>

Community Discussion

Should be No Extra Time, screenshot shows Enable Auto Pause is unchecked.. so there is no pausing at all. On idle, server will run at min vcore setting. Second option is intermittent load as indicated by max and min vcore settings which is only available on serverless compute option.

Just done exam and auto pause delay was checked

Auto-pause is not enabled in this case: The latency to auto-resume and auto-pause a serverless database is generally order of 1 minute to auto-resume and 1-10 minutes after the expiration of the delay period to auto-pause.

Pls ignore. Should be No Extra Time.

Pls ignore. Should be No Extra Time.

Question #29

You plan to deploy an app that includes an Azure SQL database and an Azure web app. The app has the following requirements:

- ⇒ The web app must be hosted on an Azure virtual network.
- ⇒ The Azure SQL database must be assigned a private IP address.
- ⇒ The Azure SQL database must allow connections only from a specific virtual network.

You need to recommend a solution that meets the requirements.

What should you include in the recommendation?

A) Azure Private Link (Correct Answer)

- B) a network security group (NSG)
- C) a database-level firewall
- D) a server-level firewall

Explanation

Correct Answer:

A

Private Link allows you to connect to various PaaS services in Azure via a private endpoint.

A private endpoint is a private IP address within a specific VNet and subnet.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/private-endpoint-overview>

Community Discussion

Is this the correct answer?

A is correct.

Selected Answer: A

Private Link is the only option that meets all of the requirements.

Question #30

You are planning a solution that will use Azure SQL Database. Usage of the solution will peak from October 1 to January 1 each year.

During peak usage, the database will require the following:

- ⇒ 24 cores
- ⇒ 500 GB of storage
- ⇒ 124 GB of memory
- ⇒ More than 50,000 IOPS

During periods of off-peak usage, the service tier of Azure SQL Database will be set to Standard.

Which service tier should you use during peak usage?

A) Business Critical (Correct Answer)

- B) Premium
C) Hyperscale

Explanation

Correct Answer:

A

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/resource-limits-vcore-single-databases#business-critical---provisioned-compute---gen4>

Community Discussion

Correct answer Business critical

I think the answer should be Premium which is in the DTU Purchase Model with "Standard". Business Critical is with General Purpose in vCore Purchase Model.

I believe that correct answer is A (Business critical in vCore purchasing model) because we have request to scale up and down not only in compute resources but also a storage which is available only vCore purchasing model. Hyperscale is not suits us well as well because it is reversable only within 45 days of the original migration to Hyperscale. Links <https://docs.microsoft.com/en-us/azure/azure-sql/database/service-tiers-dtu?>

view=azuresql and <https://docs.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale?view=azuresql>

This is a question for DP-300 ? I hope we're good for the next questions now lol

Selected Answer: A

Answer is business Critical. Requirements in question has specific CPU, memory and Storage during peak season and the ONLY option that meets this requirement is Vcore purchasing model --> "Business Critical Service Tier". I know question says Azure database will be switched to "Standard tier" (DTU purchasing model) during OFF peak season. Its easy to swap between V core and DTU purchasing models without any downtime to Azure sql database, which meets requirements and makes the service tier change easy between Peak and OFF peak seasons. I Strongly agree the answer is "Business Critical". REASON I say "Premium" CANNOT be answer is because it is part of DTU purchasing model which makes it challenging to accommodate the requirement of specific CPU, memory and storage need during peak season because DTU model comes with resources that can be adjusted with predefined configuration which DOESNOT meet asked requirements in the question about CPU, RAM and Storage

Question #31

HOTSPOT -

You have an Azure subscription.

You need to deploy an Azure SQL resource that will support cross database queries by using an Azure Resource Manager (ARM) template.

How should you complete the ARM template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
"resources": [
    ...
    "type": "Microsoft.Sql/servers",
    "name": "[parameters('targetName')]",
    "location": "[parameters('location')]",
    "sku": {
        "name": "[parameters('skuName')]"
    },
    ...
    "dependsOn": [
        "[parameters('targetName')]",
        "[parameters('virtualNetworkName')]",
        "[variables('networkSecurityGroupName')]",
    ],
    "properties": {
        "administratorLogin": "[parameters('administratorLogin')]",
        "administratorLoginPassword": "[parameters('administratorLoginPassword')]",
        "subnetId": "[resourceId('Microsoft.Network/virtualNetworks/subnets', parameters('virtualNetworkName'), parameters('virtualNetworkName'), parameters('subnetName'))]",
        "storageSizeInGB": "[parameters('storageSizeInGB')]",
        "vCores": "[parameters('vCores')]",
        "licenseType": "[parameters('licenseType')]"
    }
]
```

Explanation

Correct Answer:

Answer Area

```

"resources": [
    ...
    "type": "Microsoft.Sql/managedInstances"
        "name": "[parameters('targetName')]",
        "location": "[parameters('location')]",
        "sku": {
            "name": "[parameters('skuName')]"
        ...
        "dependsOn": [
            "[parameters('targetName')]",
            "[parameters('virtualNetworkName')]"
            "[variables('networkSecurityGroupName')]",
        ],
        "properties": {
            "administratorLogin": "[parameters('administratorLogin')]",
            "administratorLoginPassword": "[parameters('administratorLoginPassword')]",
            "subnetId": "[resourceId('Microsoft.Network/virtualNetworks/subnets', parameters('virtualNetworkName'), parameters('virtualNetworkName'), parameters('subnetName'))]",
            "storageSizeInGB": "[parameters('storageSizeInGB')]", "vCores": "[parameters('vCores')]",
            "licenseType": "[parameters('licenseType')]"
        ...
    ]
]

```

Box 1: Microsoft.Sql/managedInstances

The Managed Instance depends on the Virtual Network.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/create-template-quickstart?tabs=azure-powershell>

Community Discussion

because virtual network has to be deployed before

because virtual network has to be deployed before

I retract the statement and have a correction : Box 2: parameters('virtualNetworkName')
"dependsOn": ["[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworkName'))]" The key is parameters vs variables ...

I retract the statement and have a correction : Box 2: parameters('virtualNetworkName')
"dependsOn": ["[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworkName'))]" The key is parameters vs variables ...

The answer is correct. { "type": "Microsoft.Sql/managedInstances", "apiVersion": "2020-02-02-preview", "name": "[parameters('managedInstanceName')]", "location":

```
"[parameters('location')]", "dependsOn": [ "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworkName'))]" ] }
```

Question #32

HOTSPOT -

You have the following Azure Resource Manager template.

```
...
  "variables": {
    "serverName": "azsqlDbServer0001"
  },
  "resources": [
    {
      "name": "[variables('serverName')]",
      "type": "Microsoft.Sql/servers",
      "apiVersion": "2019-06-01-preview",
      "location": "[parameters('location')]",
      "properties": {
        "administratorLogin": "[parameters('administratorLogin')]",
        "administratorLoginPassword": "[parameters('administratorLoginPassword')]",
        "version": "12.0"
      },
      "resources": [
        {
          "name": "[concat(variables('serverName'), '/', parameters('databaseName'))]",
          "type": "Microsoft.Sql/servers/databases",
          "apiVersion": "2020-08-01-preview",
          "location": "[parameters('location')]",
          "kind": "v12.0",
          "sku": {
            "name": "Standard",
            "tier": "Standard",
            "capacity": 10
          },
          "dependsOn": [
            "[concat('Microsoft.Sql/servers/', variables('serverName'))]"
          ],
          "properties": {
          },
          "resources": [
          ]
        }
      ]
    }
  ],
  ...
}
```

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

Statements	Yes	No
The template deploys a serverless Azure SQL database.	<input type="radio"/>	<input type="radio"/>
The template deploys a database to an Azure SQL Database managed instance.	<input type="radio"/>	<input type="radio"/>
The pricing tier of the database deployment is based on DTUs.	<input type="radio"/>	<input type="radio"/>

Explanation

SecExams

Correct Answer:

Answer Area

Statements	Yes	No
The template deploys a serverless Azure SQL database.	<input type="radio"/>	<input checked="" type="radio"/>
The template deploys a database to an Azure SQL Database managed instance.	<input type="radio"/>	<input checked="" type="radio"/>
The pricing tier of the database deployment is based on DTUs.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/purchasing-models> <https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-arm-template-quickstart>

Community Discussion

Answer is correct

The SKU type of Standard is only available in DTU pricing model

the value of "capacity" = 10

the value of "capacity" = 10

all answers are correct. The first one is tricky which looks like correct but it is not. The keyword is "serverless" which is not available in DTU purchasing option.

Question #33

HOTSPOT -

You have an on-premises Microsoft SQL Server 2019 instance that hosts a database named DB1.

You plan to perform an online migration of DB1 to an Azure SQL managed instance by using the Azure Database Migration Service.

You need to create a backup of DB1 that is accessible to the Azure Database Migration Service.

What should you run for the backup and where should you store the backup? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Run:

- A full backup and a log backup appended to the same file by using the WITH CHECKSUM option
- A full backup and a log backup to separate files by using the WITH CHECKSUM option
- A full backup and a log backup to separate files by using the WITH FILE_SNAPSHOT option

Store the backup in:

- A Recovery Services vault
- An Azure Blob storage account
- An SMB file share

Explanation

Correct Answer:

Answer Area

Run:

- A full backup and a log backup appended to the same file by using the WITH CHECKSUM option
- A full backup and a log backup to separate files by using the WITH CHECKSUM option**
- A full backup and a log backup to separate files by using the WITH FILE_SNAPSHOT option

Store the backup in:

- A Recovery Services vault**
- An Azure Blob storage account
- An SMB file share

Box 1: ..with CHECKSUM option -

Azure Database Migration Service does not initiate any backups, and instead uses existing backups, which you may already have as part of your disaster recovery plan, for the migration. Be sure that you take backups using the WITH CHECKSUM option.

Box 2: An SMB share -

For online migrations from SQL Server to SQL Managed Instance using Azure Database Migration Service, you must provide the full database backup and subsequent log backups in the SMB network share that the service can use to migrate your databases.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-managed-instance-online>

Community Discussion

Absolutely right. Files must be separate.

Answer is correct <https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-managed-instance-online>

Correct answer: Using Azure Database Migration Service, you must provide the full database backup and subsequent log backups in the SMB network share that the service can use to migrate your databases. Be sure that you take backups using the WITH CHECKSUM option

I will go with the Blob Storage Account, since I used it quite a number of times in past projects. As already quoted here, SMB share is a bit of an administrative nightmare - the integration runtime does not work quite well.

When doing an online migration to Managed Instance you can store the backups in blob storage without needing to have an SMB share and the integration runtime running.

<https://learn.microsoft.com/en-us/azure/dms/tutorial-sql-server-managed-instance-online-ads>

Question #34

HOTSPOT -

You have an Azure subscription.

You plan to deploy an Azure SQL database by using an Azure Resource Manager template.

How should you complete the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
{  
  "resources": [  
    {  
      "type": "Microsoft.Sql/servers"  
      "Microsoft.SqlVirtualMachines/sqlVirtualMachines"  
      "Microsoft.Synapse/workspaces/sqldatabases"  
      "apiVersion": "2020-02-02-preview",  
      "name": "[parameters('name1')]",  
      "location": "[parameters('location')]",  
      ...  
      "resources": [  
        {  
          "type": "databases",  
          "apiVersion": "2020-02-02-preview",  
          ...  
          "dependsOn": [  
            "properties": [  
              "tags": [  
                "[resourceId('Microsoft.Sql/servers', concat(parameters('name1')))]"  
              ...  
            }  
          ]  
        ]  
      ]  
    ]  
  ]  
}
```

Explanation

Correct Answer:

Answer Area

```
{
  "resources": [
    {
      "type": "Microsoft.Sql/servers",
      "Microsoft.SqlVirtualMachines/sqlVirtualMachines",
      "Microsoft.Synapse/workspaces/sqldatabases"
    },
    ...
    "apiVersion": "2020-02-02-preview",
    "name": "[parameters('name1')]",
    "location": "[parameters('location')]",
    ...
    "resources": [
      {
        "type": "databases",
        "apiVersion": "2020-02-02-preview",
        ...
        "dependsOn": [
          "properties": [
            "tags": [
              ...
            ]
          ],
          "[resourceId('Microsoft.Sql/servers', concat(parameters('name1')))]"
        ]
      }
    ]
  }
}
```

Box 1: "Microsoft.Sql/servers"

Example:

```
"resources": [
{
  "type": "Microsoft.Sql/servers",
  "apiVersion": "2021-08-01-preview",
  "name": "[parameters('serverName')]",
  "location": "[parameters('location')]",
  "properties": {
    "administratorLogin": "[parameters('administratorLogin')]",
    "administratorLoginPassword": "[parameters('administratorLoginPassword')]"
  }
},
{
  "type": "Microsoft.Sql/servers/databases",
  "apiVersion": "2021-08-01-preview",
  "name": "[format('{0}/{1}', parameters('serverName'), parameters('sqlDBName'))]",
  "location": "[parameters('location')]",
  "sku": {
    "name": "Standard",
    "tier": "Standard"
  },
  "dependsOn": [
    "[resourceId('Microsoft.Sql/servers', parameters('serverName'))]"
  ]
}]
```

}

Box 2: "dependsOn": [

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-arm-template-quickstart>

Community Discussion

type": "Microsoft.Sql/servers/databases"

correct

correct

I think the given answer is right if we see the docs link page provided with the answer

<https://learn.microsoft.com/en-us/azure/azure-sql/database/single-database-create-arm-template-quickstart?view=azuresql>

Question #35

You have an on-premises Microsoft SQL Server 2019 server that hosts a database named DB1.

You have an Azure subscription that contains an Azure SQL managed instance named SQLMI1 and a virtual network named VNET1. SQLMI1 resides on VNET1.

The on-premises network connects to VNET1 by using an ExpressRoute connection.

You plan to migrate DB1 to SQLMI1 by using Azure Database Migration Service.

You need to configure VNET1 to support the migration.

What should you do?

A) Configure service endpoints. (Correct Answer)

- B) Configure virtual network peering.
- C) Deploy an Azure firewall.
- D) Configure network security groups (NSGs).

Explanation

Correct Answer:

A

During virtual network setup, if you use ExpressRoute with network peering to Microsoft, add the following service endpoints to the subnet in which the service will be provisioned:

- * Target database endpoint (for example, SQL endpoint, Cosmos DB endpoint, and so on)
- * Storage endpoint
- * Service bus endpoint

This configuration is necessary because Azure Database Migration Service lacks internet connectivity.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-managed-instance>

Community Discussion

Selected Answer: A

During virtual network setup, if you use ExpressRoute with network peering to Microsoft, add the following service endpoints to the subnet in which the service will be provisioned: <https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-managed-instance>

A is correct

Selected Answer: D

A. Configure service endpoints: Service endpoints provide secure and direct connectivity to Azure services over the Azure backbone network. They are not typically used for connectivity between on-premises environments and Azure services. B. Configure virtual network peering: Virtual network peering is used to connect two Azure virtual networks seamlessly. Since your scenario involves an on-premises network and not another Azure virtual network, peering is not applicable. C. Deploy an Azure firewall: An Azure firewall is a network security service that protects Azure Virtual Network resources. It could be used to govern the traffic between your on-premises environment and the Azure SQL Managed Instance, but it is not the primary tool for enabling connectivity. D. Configure network security groups (NSGs): Network Security Groups are used to control inbound and outbound traffic to network interfaces (NIC), VMs, and subnets. By creating and applying NSG rules, you can ensure that traffic from the on-premises network can reach SQLMI1 over the ExpressRoute connection.

Question #36

You have an on-premises Microsoft SQL server that uses the FileTables and FileStream features.

You plan to migrate to Azure SQL.

Which service should you use?

A) Azure SQL Database

B) SQL Server on an Azure Virtual Machine (Correct Answer)

C) Azure SQL Managed Instance

D) Azure Database for MySQL

Explanation

Correct Answer:

B

SQL Server VM alternative.

Your business might have requirements that make SQL Server on Azure Virtual Machines a more suitable target than Azure SQL Database.

If one of the following conditions applies to your business, consider moving to a SQL Server virtual machine (VM) instead:

- * You have strict dependency on features that are still not supported, such as FileStream/FileTable, PolyBase, and cross-instance transactions.

- * Etc.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/migration-guides/database/sql-server-to-sql-database-overview>

Community Discussion

Selected Answer: B

<https://docs.microsoft.com/en-us/azure/azure-sql/migration-guides/database/sql-server-to-sql-database-overview?view=azuresql> If one of the following conditions applies to your business, consider moving to a SQL Server virtual machine (VM) instead: You have strict dependency on features that are still not supported, such as FileStream/FileTable, PolyBase, and cross-instance transactions.

It's tricky because it mentions "migrate to Azure SQL" instead of "migrate to Azure".

Your business might have requirements that make SQL Server on Azure Virtual Machines a more suitable target than Azure SQL Database. You require direct access to the operating system or file system, such as to install third-party or custom agents on the same virtual machine with SQL Server. You have strict dependency on features that are still not supported, such as FileStream/FileTable, PolyBase, and cross-instance transactions. You need to stay at a specific version of SQL Server (2012, for example). Your compute requirements are much lower than a managed instance offers (one vCore, for example), and database consolidation is not an acceptable option.

yes but as the answer explains, if you need to maintain the use of FileTable + Filestream in azure, it has to be on an SQL Server, which has to be on a VM(only possible setup to run SQL Server on azure). Azure sql or sql managed doesn't support it.

yes but as the answer explains, if you need to maintain the use of FileTable + Filestream in azure, it has to be on an SQL Server, which has to be on a VM(only possible setup to run SQL Server on azure). Azure sql or sql managed doesn't support it.

Question #37

You need to migrate an on-premises Microsoft SQL Server database to Azure SQL Database. The solution must minimize downtime.

What should you do?

- A) Configure Transaction Log Shipping.
- B) Implement Always On availability groups.
- C) Configure transactional replication. (Correct Answer)**
- D) Import a BACPAC.

Explanation

Correct Answer:

C

Use Transactional Replication.

When you can't afford to remove your SQL Server database from production while the migration is occurring, you can use SQL Server transactional replication as your migration solution.

Note: There are two primary methods for migrating a SQL Server 2005 or later database to Azure SQL Database. The first method (database copy or BACPAC importation) is simpler but requires some, possibly substantial, downtime during the migration. The second method (transactional replication) is more complex, but substantially eliminates

downtime during the migration.

Incorrect:

Not D: The import BACPAC method includes downtime during migration.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/migrate-to-database-from-sql-server#method-1-migration-with-downtime-during-the-migration>

Community Discussion

Ans : C There are two primary methods for migrating a SQL Server 2005 or later database to Azure SQL Database. The first method is simpler but requires some, possibly substantial, downtime during the migration. The second method is more complex, but substantially eliminates downtime during the migration. Method 1: Migration with downtime during the migration Method 2: Use Transactional Replication Ref : <https://docs.microsoft.com/en-us/azure/azure-sql/database/migrate-to-database-from-sql-server?view=azuresql#method-1-migration-with-downtime-during-the-migration>

Answer = C: Migration with minimal downtime will always be - use Replication

))) It is worth mentioning explicitly that the amount of downtime required to create, upload, and import a bacpac of a large database may be prohibitively large in the context of an actual production application migration. In those cases, the migration approach using transactional replication, which significantly reduces the necessary downtime at the cost of added complexity, may be a feasible solution.

))) It is worth mentioning explicitly that the amount of downtime required to create, upload, and import a bacpac of a large database may be prohibitively large in the context of an actual production application migration. In those cases, the migration approach using transactional replication, which significantly reduces the necessary downtime at the cost of added complexity, may be a feasible solution.

Selected Answer: C

Answer is C

Question #38

You have an Azure SQL database named DB1.

You have a table name Table1 that has 20 columns of type CHAR(400). Row compression for Table1 is enabled.

During a database audit, you discover that none of the fields contain more than 150 characters.

You need to ensure that you can apply page compression to Table1.

What should you do?

- A) Configure the columns as sparse.
- B) Change the column type to NVARCHAR(MAX).
- C) Change the column type to VARCHAR(MAX).

D) Change the column type to VARCHAR(200). (Correct Answer)

Explanation

Correct Answer:

D

We reduce the max length of the column from 400 to 200.

Incorrect:

Not A: Sparse column is useful when there are many null columns.

The SQL Server Database Engine uses the SPARSE keyword in a column definition to optimize the storage of values in that column. Therefore, when the column value is NULL for any row in the table, the values require no storage.

Not B, Not C: SQL Server 2005 got around the limitation of 8KB storage size and provided a workaround with varchar(max). It is a non-Unicode large variable-length character data type and can store a maximum of $2^{31}-1$ bytes (2 GB) of non-Unicode characters.

Reference:

<https://www.sqlshack.com/sql-varchar-data-type-deep-dive/>

<https://36chambers.wordpress.com/2020/06/18/nvarchar-everywhere-a-thought-experiment/>

Community Discussion

looks correct

Selected Answer: D

D is the only option that would shrink the column and still allow for a little additional characters.

Question #39

You have an on-premises Microsoft SQL Server named SQL1 that hosts five databases.

You need to migrate the databases to an Azure SQL managed instance. The solution must minimize downtime and prevent data loss.

What should you use?

- A) Always On availability groups
- B) Backup and Restore
- C) log shipping

D) Database Migration Assistant (Correct Answer)

Explanation

Correct Answer:

D

The Data Migration Assistant (DMA) helps you upgrade to a modern data platform by detecting compatibility issues that can impact database functionality in your new version of SQL Server or Azure SQL Database. DMA recommends performance and reliability improvements for your target environment and allows you to move your schema, data, and uncontained objects from your source server to your target server.

Capabilities include:

Assess on-premises SQL Server instance(s) migrating to Azure SQL database(s).

Note: For large migrations (in terms of number and size of databases), we recommend that you use the Azure Database Migration Service, which can migrate databases at scale.

Migrate an on-premises SQL Server instance to a modern SQL Server instance hosted on-premises or on an Azure virtual machine (VM) that is accessible from your on-premises network.

Incorrect:

Not B: Native RESTORE DATABASE FROM URL - uses native backups from SQL Server and requires some downtime.

Not C: What is the purpose of log shipping?

Similar to replication, the primary purpose of log shipping is to increase database availability by maintaining a backup server that can replace a production server quickly.

Reference:

<https://docs.microsoft.com/en-us/sql/dma/dma-overview>

<https://docs.microsoft.com/en-us/azure/azure-sql/migration-guides/managed-instance/sql-server-to-managed-instance-guide>

Community Discussion

Selected Answer: B

DMA does not support database migrations to Azure SQL Managed Instance. Recommendation is to use the Azure SQL migration extension for Azure Data Studio, which supports both online and offline database migrations to Azure SQL Managed Instance, but here we don't have the option "Azure SQL migration extension for Azure Data Studio". <https://learn.microsoft.com/en-us/sql/dma/dma-overview?view=sql-server-ver16#capabilities> Regarding log shipping to Managed Instance is not possible; it only supports the restore of full backups. <https://dba.stackexchange.com/questions/232332/is-it-possible-to-log-ship-from-on-premise-sql-server-to-azure-sql-managed-insta> So the only option that we can use is Backup and Restore

DMA does not support database migrations to Azure SQL Managed Instance. Recommendation is to use the Azure SQL migration extension for Azure Data Studio, which supports both online and offline database migrations to Azure SQL Managed Instance. <https://learn.microsoft.com/en-us/sql/dma/dma-overview?view=sql-server-ver16>

Selected Answer: B

Backup and restore is for now only option from given.

answer is correct. <https://www.bing.com/ck/a/?=&p=c8e730966a3cda75JmltdHM9MTY3NzExMDQwMCZpZ3VpZD0yNDk2ZTQwNi0zZjY0LTZhNjY1MzA3MC1mNjc1f6753ef96b53&psq=dma+to+azure+managed+instance&u=a1aHR0cHM6Ly9sZWFi5taWNyb3NvZnQuY29tL2V>

Changing my mind on this - Believe answer is B after reviewing. Migration Service is different from Migration Assistant. Migration Assistant only assesses databases for migration

Question #40

You have a new Azure SQL database. The database contains a column that stores confidential information.

You need to track each time values from the column are returned in a query. The tracking information must be stored for 365 days from the date the query was executed.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) Turn on auditing and write audit logs to an Azure Storage account. (Correct Answer)

B) Add extended properties to the column.

C) Turn on auditing and write audit logs to an Event Hub

D) Apply sensitivity labels named Highly Confidential to the column. (Correct Answer)

E) Turn on Azure Defender for SQL (Correct Answer)

Explanation

Correct Answer:

ADE

D: You can apply sensitivity-classification labels persistently to columns by using new metadata attributes that have been added to the SQL Server database engine. This metadata can then be used for advanced, sensitivity-based auditing and protection scenarios.

A: An important aspect of the information-protection paradigm is the ability to monitor access to sensitive data. Azure SQL Auditing has been enhanced to include a new field in the audit log called data_sensitivity_information. This field logs the sensitivity classifications (labels) of the data that was returned by a query. Here's an example:

d	client_ip	application_name	duration_milliseconds	response_rows	affected_rows	connection_id	data_sensitivity_information
	7.125	Microsoft SQL Server Management Studio - Query	1	847	847	C244A066-2271...	Confidential - GDPR
	7.125	Microsoft SQL Server Management Studio - Query	2	32	32	C244A066-2271...	Confidential
	7.125	Microsoft SQL Server Management Studio - Query	41	32	32	A7088FD4-759E...	Confidential, Confidential - GDPR

E: Enable Microsoft Defender for Azure SQL Database at the subscription level from Microsoft Defender for Cloud.

Note: Microsoft Defender for SQL is a unified package for advanced SQL security capabilities. Microsoft Defender for Cloud is available for Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/data-discovery-and-classification-overview> <https://docs.microsoft.com/en-us/azure/azure-sql/database/azure-defender-for-sql>

Community Discussion

Selected Answer: AD

Compared against Measure Up practice test the correct answer is A and D, so its a two answer question and E is just the mistake.

Selected Answer: ACD

ACD is the right answer.

Selected Answer: ACD

If you get option C as below instead of the one which is shown now - Turn on Advance Data Security for Azure SQL Server then the answers are ACD. At this moment its just AD

Event hub max for 7 days

Event hub max for 7 days

Question #41

You have an Azure virtual machine named VM1 on a virtual network named VNet1. Outbound traffic from VM1 to the internet is blocked.

You have an Azure SQL database named SqlDb1 on a logical server named SqlSrv1.

You need to implement connectivity between VM1 and SqlDb1 to meet the following requirements:

- ⇒ Ensure that all traffic to the public endpoint of SqlSrv1 is blocked.
- ⇒ Minimize the possibility of VM1 exfiltrating data stored in SqlDb1.

What should you create on VNet1?

- A) a VPN gateway
- B) a service endpoint
- C) a private link (Correct Answer)**
- D) an ExpressRoute gateway

Explanation

Correct Answer:

C

Azure Private Link enables you to access Azure PaaS Services (for example, Azure Storage and SQL Database) and Azure hosted customer-owned/partner services over a private endpoint in your virtual network.

Traffic between your virtual network and the service travels the Microsoft backbone network. Exposing your service to the public internet is no longer necessary.

Reference:

<https://docs.microsoft.com/en-us/azure/private-link/private-link-overview>

corrected "With Service Endpoints, traffic still left your vNet and hit the public endpoint of the PaaS resource, with Private Link the PaaS resource sits within your vNet and gets a private IP on your vNet. When you send traffic to the PaaS resource, it does not leave the virtual network." <https://samcogan.com/service-endpoints-and-private-link-whats-the-difference/>
#:~:text=The%20key%20difference%20between%20Private,resource%20into%20your%20virtual%20network.

Selected Answer: C

It is private link or private endpoint. C is correct.

it is Service Endpoint , the key word is "exfiltrating data" , you avoid that with a service endpoint

A private Link can get this done.

A private Link can get this done.

Question #42

DRAG DROP -

You have a new Azure SQL database named DB1 on an Azure SQL server named AzSQL1.

The only user who was created is the server administrator.

You need to create a contained database user in DB1 who will use Azure Active Directory (Azure AD) for authentication.

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:

Actions	Answer Area
Connect to DB1 by using the Active Directory admin account.	
Create a user by using the FROM EXTERNAL PROVIDER clause.	
Connect to DB1 by using the server administrator account.	
Set the Active Directory Admin for AzSQL1.	
From the Azure portal, assign the SQL DB Contributor role to the user.	
Create a login in the master database.	

Explanation

Correct Answer:

Actions	Answer Area
Connect to DB1 by using the Active Directory admin account.	Set the Active Directory Admin for AzSQL1.
Create a user by using the FROM EXTERNAL PROVIDER clause.	Connect to DB1 by using the Active Directory admin account.
Connect to DB1 by using the server administrator account.	Create a user by using the FROM EXTERNAL PROVIDER clause.
Set the Active Directory Admin for AzSQL1.	
From the Azure portal, assign the SQL DB Contributor role to the user.	
Create a login in the master database.	

Step 1: Set up the Active Directory Admin for AzSQL1.
 Step 2: Connect to DB1 by using the server administrator.
 Sign into your managed instance with an Azure AD login granted with the sysadmin role.
 Step 3: Create a user by using the FROM EXTERNAL PROVIDER clause.
 FROM EXTERNAL PROVIDER is available for creating server-level Azure AD logins in SQL Database managed instance. Azure AD logins allow database-level Azure AD principals to be mapped to server-level Azure AD logins. To create an Azure AD user from an Azure AD login use the following syntax:
 CREATE USER [AAD_principal] FROM LOGIN [Azure AD login]
 Reference:
<https://docs.microsoft.com/en-us/sql/t-sql/statements/create-user-transact-sql>

Community Discussion

answer is correct, you have to connect using AD otherwise you will see this error.
 Principal 'user@xbc.com' could not be created. Only connections established with Active Directory accounts can create other Active Directory users.

Step 2 is having contradiction in answer and explanation. How should we connect to DB1? 'using server administrator or Azure AD authentication'?

A contained database user does not have a login in the master database, and maps to an identity in Azure AD that is associated with the database. The Azure AD identity can be either an individual user account or a group.

<https://medium.com/@letienthanh0212/setup-azure-sql-server-to-useazure-active-directory-option-b90dccc9e277>

I would go with provided answers.

Question #43

HOTSPOT -

You have an Azure SQL database that contains a table named Customer. Customer has the columns shown in the following table.

Customer_ID	Customer_Name	Customer_Phone
11001	Contoso, Ltd.	555-555-0173
11002	Litware, Inc.	555-505-3124
11003	ADatum Corporation	555-689-4312

You plan to implement a dynamic data mask for the Customer_Phone column.

The mask must meet the following requirements:

- ⇒ The first six numerals of each customer's phone number must be masked.
- ⇒ The last four digits of each customer's phone number must be visible.
- ⇒ Hyphens must be preserved and displayed.

How should you configure the dynamic data mask? To answer, select the appropriate options in the answer area.

Hot Area:

Answer Area

Exposed Prefix:

0
1
3
5

Padding String:

x
xxxxxx
xxx-XXX
XXX-XXX-
x[3]-x[3]

Exposed Suffix:

0
1
3
5

Explanation

Correct Answer:

Answer Area

Exposed Prefix:

0
1
3
5

Padding String:

x
XXXXXX
XXX-XXX
XXX-XXX-
x[3]-x[3]

Exposed Suffix:

0
1
3
5

Box 1: 0 -

Custom String : Masking method that exposes the first and last letters and adds a custom padding string in the middle. prefix,[padding],suffix

Box 2: xxx-xxx -

Box 3: 5 -

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/dynamic-data-masking>

Community Discussion

The answer is correct (0,xxx-xx,5), and here is an example of it --Create table Create Table Customers (ID int Primary Key identity(1,1) Not Null, Phone Nvarchar(100)) GO --Load Data insert into Customers Values ('555-555-0173'),('555-505-3124'),('555-689-4321') --Create user CREATE USER TestUser WITHOUT LOGIN; GRANT SELECT ON Customers TO TestUser; -- Test the User in Select data EXECUTE AS USER = 'TestUser'; SELECT * FROM Customers; REVERT; ---Now add Masking ALTER TABLE Customers ALTER COLUMN Phone nvarchar(100) MASKED WITH (FUNCTION= 'partial(0,"xxx-xxx",5)'); --Select the data again using Testuser EXECUTE AS USER = 'TestUser'; SELECT * FROM Customers; REVERT;

Given Answer is correct, it can be partial(0,"XXX-XXX",5) or partial(0,"XXX-XXX-",4)

Thank you!

Thank you!

Note that the answer shown in the picture is correct, but the explanation is incorrect because the masking is wrong in the explantion.

Question #44

DRAG DROP -

You have an Azure SQL database that contains a table named Employees.

Employees contains a column named Salary.

You need to encrypt the Salary column. The solution must prevent database administrators from reading the data in the Salary column and must provide the most secure encryption.

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:

Actions	Answer Area
Encrypt the Salary column by using the randomized encryption type.	
Create a column encryption key.	
Enable Transparent Data Encryption (TDE).	
Encrypt the Salary column by using the deterministic encryption type.	
Apply a dynamic data mask to the Salary column.	
Create a column master key.	

Explanation

Correct Answer:

Actions	Answer Area
Encrypt the Salary column by using the randomized encryption type.	Create a column master key.
Create a column encryption key.	Create a column encryption key.
Enable Transparent Data Encryption (TDE).	Encrypt the Salary column by using the randomized encryption type.
Encrypt the Salary column by using the deterministic encryption type.	
Apply a dynamic data mask to the Salary column.	
Create a column master key.	

Step 1: Create a column master key
 Create a column master key metadata entry before you create a column encryption key metadata entry in the database and before any column in the database can be encrypted using Always Encrypted.

Step 2: Create a column encryption key.
 Step 3: Encrypt the Salary column by using the randomized encryption type.
 Randomized encryption uses a method that encrypts data in a less predictable manner. Randomized encryption is more secure, but prevents searching, grouping, indexing, and joining on encrypted columns.
 Note: A column encryption key metadata object contains one or two encrypted values of a column encryption key that is used to encrypt data in a column. Each value is encrypted using a column master key.

Incorrect Answers:
 Deterministic encryption.
 Deterministic encryption always generates the same encrypted value for any given plain text value. Using deterministic encryption allows point lookups, equality joins, grouping and indexing on encrypted columns. However, it may also allow unauthorized users to guess information about encrypted values by examining patterns in the encrypted column, especially if there's a small set of possible encrypted values, such as True/False, or North/South/East/West region.

Reference:
<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/always-encrypted-database-engine>

Community Discussion

Here to key phrase is "most secure" encryption that is why the answer is correct.
 Randomized encryption uses a method that encrypts data in a less predictable manner.

Randomized encryption is more secure, but prevents searching, grouping, indexing, and joining on encrypted columns.

Worth noting that if a similar question requires that the encrypted column be able to be used for point lookups, equality joins, grouping or indexing of the column, then Deterministic Encryption would be the answer.

I think that the provided answers are correct.

I can't see how this will prevent Administrators from reading everything. It seems that something is missing

Always On Encryption is missing. In real-world, there would be Security Admin that has access to the keys, and Database Admin that would have access to the database. Only the business application(s) that need access to such sensitive data would be able to get both the keys needed from Key Vault and the Data needed from Database to be able to read / update the data.

Question #45

HOTSPOT -

You have an Azure SQL database named DB1 that contains two tables named Table1 and Table2. Both tables contain a column named a Column1. Column1 is used for joins by an application named App1.

You need to protect the contents of Column1 at rest, in transit, and in use.

How should you protect the contents of Column1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Encryption key:

Column encryption key
Database encryption key
Service master key

Encryption type:

Deterministic
Randomized
Transparent Data Encryption (TDE)

Explanation

Correct Answer:

Answer Area

Encryption key:

Column encryption key
Database encryption key
Service master key

Encryption type:

Deterministic
Randomized
Transparent Data Encryption (TDE)

Box 1: Column encryption Key -

Always Encrypted uses two types of keys: column encryption keys and column master keys. A column encryption key is used to encrypt data in an encrypted column. A column master key is a key-protecting key that encrypts one or more column encryption keys.

Incorrect Answers:

TDE encrypts the storage of an entire database by using a symmetric key called the Database Encryption Key (DEK).

Box 2: Deterministic -

Always Encrypted is a feature designed to protect sensitive data, such as credit card numbers or national identification numbers (for example, U.S. social security numbers), stored in Azure SQL Database or SQL Server databases. Always Encrypted allows clients to encrypt sensitive data inside client applications and never reveal the encryption keys to the Database Engine (SQL Database or SQL Server).

Always Encrypted supports two types of encryption: randomized encryption and deterministic encryption.

Deterministic encryption always generates the same encrypted value for any given plain text value. Using deterministic encryption allows point lookups, equality joins, grouping and indexing on encrypted columns.

Incorrect Answers:

- ⇒ Randomized encryption uses a method that encrypts data in a less predictable manner. Randomized encryption is more secure, but prevents searching, grouping, indexing, and joining on encrypted columns.
- ⇒ Transparent data encryption (TDE) helps protect Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics against the threat of malicious offline activity by encrypting data at rest. It performs real-time encryption and decryption of the database, associated backups, and transaction log files at rest without requiring changes

to the application.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/always-encrypted-database-engine>

Community Discussion

Correct answer

Though starting SQL Server 2019 they made it possible to compare, group, search, etc. on columns with Randomized encryption via Secure enclaves <https://docs.microsoft.com/en-us/learn/modules/protect-data-transit-rest/5-explain-object-encryption-secure-enclaves>. So now both Deterministic and Randomized would do.

Question #46

You have 40 Azure SQL databases, each for a different customer. All the databases reside on the same Azure SQL Database server.

You need to ensure that each customer can only connect to and access their respective database.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) Implement row-level security (RLS).

B) Create users in each database. (Correct Answer)

C) Configure the database firewall.

D) Configure the server firewall.

E) Create logins in the master database. (Correct Answer)

F) Implement Always Encrypted.

Explanation

Correct Answer:

BE

E: Generating Logins -

Logins are server wide login and password pairs, where the login has the same password

across all databases. Here is some sample Transact-SQL that creates a login:

```
CREATE LOGIN readonlylogin WITH password='1231!#ASDF!a';
```

You must be connected to the master database on SQL Azure with the administrative login (which you get from the SQL Azure portal) to execute the CREATE LOGIN command.

B: Creating Users.

Users are created per database and are associated with logins. You must be connected to the database in where you want to create the user. In most cases, this is not the master database. Here is some sample Transact-SQL that creates a user:

```
CREATE USER readonlyuser FROM LOGIN readonlylogin;
```

Incorrect Answers:

Not C: Database-level firewall rules only apply to individual databases. However, we need to create logins and users.

Not D: Server-level IP firewall rules apply to all databases within the same server.

Reference:

<https://azure.microsoft.com/en-us/blog/adding-users-to-your-sql-azure-database/>

Community Discussion

The key is "only connect to and access their respective database", which means Contained DB's. In that case creating in each DB is the right choice.

DB is not the answer it means database in this case :-) the answer is BC

DB is not the answer it means database in this case :-) the answer is BC

DB is not the answer it means database in this case :-) the answer is BC

DB is not the answer it means database in this case :-) the answer is BC

Question #47

DRAG DROP -

You have an Azure SQL Database instance named DatabaseA on a server named Server1.

You plan to add a new user named App1 to DatabaseA and grant App1 db_datareader permissions. App1 will use SQL Server Authentication.

You need to create App1. The solution must ensure that App1 can be given access to other databases by using the same credentials.

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:

Actions	Answer Area
On the master database, run CREATE LOGIN [APP1] FROM EXTERNAL PROVIDER;	
On DatabaseA, run CREATE USER [APP1] WITH PASSWORD = 'P@ssW0rd!';	
On DatabaseA, run ALTER ROLE db_datareader ADD MEMBER [App1];	
On the master database, run CREATE LOGIN [App1] WITH PASSWORD = 'P@aaW0rd!';	
On DatabaseA, run CREATE USER [App1] FROM LOGIN [App1];	

Explanation

Correct Answer:

Actions

```
On the master database, run CREATE LOGIN  
[APP1] FROM EXTERNAL PROVIDER;
```

```
On DatabaseA, run CREATE USER [APP1]  
WITH PASSWORD = 'P@ssW0rd!';
```

Answer Area

```
On the master database, run CREATE LOGIN  
[App1] WITH PASSWORD = 'P@aaW0rd!';
```

```
On DatabaseA, run CREATE USER [App1]  
FROM LOGIN [App1];
```



Step 1: On the master database, run CREATE LOGIN [App1] WITH PASSWORD = 'p@aaW0rd!'
 Logins are server wide login and password pairs, where the login has the same password across all databases. Here is some sample Transact-SQL that creates a login:

```
CREATE LOGIN readonlylogin WITH password='1231!#ASDF!a';
```

You must be connected to the master database on SQL Azure with the administrative login (which you get from the SQL Azure portal) to execute the CREATE LOGIN command.

Step 2: On DatabaseA, run CREATE USER [App1] FROM LOGIN [App1]

Users are created per database and are associated with logins. You must be connected to the database in where you want to create the user. In most cases, this is not the master database. Here is some sample Transact-SQL that creates a user:

```
CREATE USER readonlyuser FROM LOGIN readonlylogin;
```

Step 3: On DatabaseA run ALTER ROLE db_datareader ADD Member [App1]

Just creating the user does not give them permissions to the database. You have to grant them access. In the Transact-SQL example below the readonlyuser is given read only permissions to the database via the db_datareader role.

```
EXEC sp_addrolemember 'db_datareader', 'readonlyuser';
```

Reference:

<https://azure.microsoft.com/en-us/blog/adding-users-to-your-sql-azure-database/>

Community Discussion

Seems to be right

The answers are correct

Step 3 should be add db_datacenter no db_datareader, 1 and 2 are steps is the answer a guess

db_datacenter is a typo. it should be a db_datareader

db_datacenter is a typo. it should be a db_datareader

Question #48

You have an Azure virtual machine named VM1 on a virtual network named VNet1. Outbound traffic from VM1 to the internet is blocked.

You have an Azure SQL database named SqlDb1 on a logical server named SqlSrv1.

You need to implement connectivity between VM1 and SqlDb1 to meet the following requirements:

- ⇒ Ensure that VM1 cannot connect to any Azure SQL Server other than SqlSrv1.
- ⇒ Restrict network connectivity to SqlSrv1.

What should you create on VNet1?

- A) a VPN gateway
- B) a service endpoint
- C) a private link (Correct Answer)**
- D) an ExpressRoute gateway

Explanation

Correct Answer:

C

Azure Private Link enables you to access Azure PaaS Services (for example, Azure Storage and SQL Database) and Azure hosted customer-owned/partner services over a private endpoint in your virtual network.

Traffic between your virtual network and the service travels the Microsoft backbone network. Exposing your service to the public internet is no longer necessary.

Reference:

<https://docs.microsoft.com/en-us/azure/private-link/private-link-overview>

Community Discussion

Answer is correct. Traffic between your virtual network and the service travels the Microsoft backbone network. Exposing your service to the public internet is no longer necessary.

Question #49

You are developing an application that uses Azure Data Lake Storage Gen 2. You need to recommend a solution to grant permissions to a specific application for a limited time period.

What should you include in the recommendation?

- A) role assignments
- B) account keys
- C) shared access signatures (SAS) (Correct Answer)**
- D) Azure Active Directory (Azure AD) identities

Explanation

Correct Answer:

C

A shared access signature (SAS) provides secure delegated access to resources in your storage account. With a SAS, you have granular control over how a client can access your data. For example:

What resources the client may access.

What permissions they have to those resources.

How long the SAS is valid.

Note: Data Lake Storage Gen2 supports the following authorization mechanisms:

- ⇒ Shared Key authorization
- ⇒ Shared access signature (SAS) authorization
- ⇒ Role-based access control (Azure RBAC)

Access control lists (ACL) Data Lake Storage Gen2 supports the following authorization mechanisms:

- ⇒ Shared Key authorization
- ⇒ Shared access signature (SAS) authorization
- ⇒ Role-based access control (Azure RBAC)
- ⇒ Access control lists (ACL)

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-sas-overview>

Community Discussion

Data Lake Storage is not part of DP-300 exam.

The given answer looks correct

answer is correct

Selected Answer: C

C is the only option for temporary access to a storage account. You could use AAD/PIM/JIT, but that's not one of the available options.

Question #50

You are designing an enterprise data warehouse in Azure Synapse Analytics that will contain a table named `Customers`. `Customers` will contain credit card information.

You need to recommend a solution to provide salespeople with the ability to view all the entries in `Customers`. The solution must prevent all the salespeople from viewing or inferring the credit card information.

What should you include in the recommendation?

- A) row-level security
- B) data masking (Correct Answer)**
- C) Always Encrypted
- D) column-level security

Explanation

Correct Answer:

B

Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics support dynamic data masking. Dynamic data masking limits sensitive data exposure by masking it to non-privileged users.

The Credit card masking method exposes the last four digits of the designated fields and adds a constant string as a prefix in the form of a credit card.

Example:

XXXX-XXXX-XXXX-1234 -

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/dynamic-data-masking-overview>

Community Discussion

Selected Answer: D

inferring work is the key. With data-masking you cannot prevent to ask if a column is equal to a certain value. Also, the salespeople don't need any information of the credit card, maybe customer support would have a use of the masked credit card. So, column-level security is the solution.

Selected Answer: B

Data- Masking is correct Question says "...solution to provide salespeople with the ability to view all the entries in Customers" See use cases of column-level security <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/column-level-security#use-cases>

To back this up, it is also mentioned by ms that data-masking will not prevent against inferring with an example: <https://docs.microsoft.com/en-us/sql/relational-databases/security/dynamic-data-masking?view=sql-server-ver15>

To back this up, it is also mentioned by ms that data-masking will not prevent against inferring with an example: <https://docs.microsoft.com/en-us/sql/relational-databases/security/dynamic-data-masking?view=sql-server-ver15>

Agree with you column-level security prevents users incl. sales from viewing credit card entry.

Question #51

HOTSPOT -

You have an Azure subscription that is linked to a hybrid Azure Active Directory (Azure AD) tenant. The subscription contains an Azure Synapse Analytics SQL pool named Pool1.

You need to recommend an authentication solution for Pool1. The solution must support multi-factor authentication (MFA) and database-level authentication. Which authentication solution or solutions should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

MFA:

- Azure AD authentication
- Microsoft SQL Server authentication
- Passwordless authentication
- Windows authentication

Database-level authentication:

- Application roles
- Contained database users
- Database roles
- Microsoft SQL Server logins

Explanation

Correct Answer:

Answer Area

MFA:

Azure AD authentication
Microsoft SQL Server authentication
Passwordless authentication
Windows authentication

Database-level authentication:

Application roles
Contained database users
Database roles
Microsoft SQL Server logins

Box 1: Azure AD authentication -

Azure Active Directory authentication supports Multi-Factor authentication through Active Directory Universal Authentication.

Box 2: Contained database users -

Azure Active Directory Uses contained database users to authenticate identities at the database level.

Incorrect:

SQL authentication: To connect to dedicated SQL pool (formerly SQL DW), you must provide the following information:

- ⇒ Fully qualified servername
- ⇒ Specify SQL authentication
- ⇒ Username
- ⇒ Password

Default database (optional)

▪

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-authentication>

Community Discussion

ANSWER CORRECT

yes, correct answer. Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics support connections from SQL Server Management Studio (SSMS) using Azure Active Directory - Universal with MFA authentication <https://>

learn.microsoft.com/en-us/azure/azure-sql/database/authentication-mfa-ssms-overview?view=azuresql

its ok?

Question #52

You have a data warehouse in Azure Synapse Analytics.

You need to ensure that the data in the data warehouse is encrypted at rest.

What should you enable?

A) Transparent Data Encryption (TDE) (Correct Answer)

- B) Advanced Data Security for this database
- C) Always Encrypted for all columns
- D) Secure transfer required

Explanation

Correct Answer:

A

Transparent data encryption (TDE) helps protect Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics against the threat of malicious offline activity by encrypting data at rest.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/transparent-data-encryption-tde-overview>

Community Discussion

The given answer seems to be correct

Selected Answer: A

A is correct. Transparent data encryption (TDE) encrypts SQL Server, Azure SQL Database, and Azure Synapse Analytics data files. This encryption is known as encrypting data at rest. <https://learn.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption?view=sql-server-ver16>

it's correct

Selected Answer: A

TDE encrypts data at rest

A. Transparent Data Encryption (TDE)

Question #53

You are designing a security model for an Azure Synapse Analytics dedicated SQL pool that will support multiple companies.

You need to ensure that users from each company can view only the data of their respective company.

Which two objects should you include in the solution? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) a column encryption key
- B) asymmetric keys

C) a function (Correct Answer)

- D) a custom role-based access control (RBAC) role

E) a security policy (Correct Answer)

Explanation

Correct Answer:

CE

Row-Level Security (RLS) simplifies the design and coding of security in your application.

RLS helps you implement restrictions on data row access. For example, you can ensure that workers access only those data rows that are pertinent to their department. Another example is to restrict customers' data access to only the data relevant to their company.

Implement RLS by using the CREATE SECURITY POLICYTransact-SQL statement, and predicates created as inline table-valued functions.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/row-level-security>

Community Discussion

Selected Answer: CE

I will go with function and security policy

The question is about row-level security. Correct answer is a function + a security policy
<https://www.snp.com/blog/bring-your-data-securely-to-the-cloud-with-azure-synapse-analytics>

This is about row based security, so CE is the correct answer. You have to create a function to restrict the rows by user/group/role then create a SECURITY POLICY filter, e.g.
CREATE FUNCTION Security.tvf_securitypredicate(@SalesRep AS nvarchar(50)) RETURNS
TABLE WITH SCHEMABINDING AS RETURN SELECT 1 AS tvf_securitypredicate_result WHERE
@SalesRep = USER_NAME() OR USER_NAME() = 'Manager'; GO
CREATE SECURITY POLICY
SalesFilter ADD FILTER PREDICATE Security.tvf_securitypredicate(SalesRep) ON
Sales.Orders WITH (STATE = ON); GO

C. a function E. a security policy Implement RLS by using the CREATE SECURITY
POLICYTransact-SQL statement, and predicates created as inline table-valued functions.
Applies to: yesSQL Server 2016 (13.x) and later, SQL Database (Get it), Azure Synapse
Analytics. <https://docs.microsoft.com/en-us/sql/relational-databases/security/row-level-security?view=sql-server-ver15>

I think the answer is correct.

Question #54

You have an Azure subscription that contains an Azure Data Factory version 2 (V2) data factory named df1. DF1 contains a linked service.

You have an Azure Key vault named vault1 that contains an encryption key named key1.

You need to encrypt df1 by using key1.

What should you do first?

A) Disable purge protection on vault1.

B) Remove the linked service from df1. (Correct Answer)

C) Create a self-hosted integration runtime.

D) Disable soft delete on vault1.

Explanation

Correct Answer:

B

A customer-managed key can only be configured on an empty data Factory. The data factory can't contain any resources such as linked services, pipelines and data flows. It is recommended to enable customer-managed key right after factory creation.

Note: Azure Data Factory encrypts data at rest, including entity definitions and any data cached while runs are in progress. By default, data is encrypted with a randomly generated Microsoft-managed key that is uniquely assigned to your data factory.

Incorrect Answers:

A, D: Should enable Soft Delete and Do Not Purge on Azure Key Vault.

Using customer-managed keys with Data Factory requires two properties to be set on the Key Vault, Soft Delete and Do Not Purge. These properties can be enabled using either PowerShell or Azure CLI on a new or existing key vault.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/enable-customer-managed-key>

Community Discussion

Currently studying for DP 300 and have come across quite a lot of questions here related to Synapse Analytics and Data Factory which I thought were not part of DP300. Would appreciate if someone who has done DP300 exam could confirm a question like this one would be out of scope?

Those questions are not part of the DP-300.

Those questions are not part of the DP-300.

verified with the study guidelines by MS from the portal, does not mention anything about data factory, synapse analytics & databricks. should be out of scope for DP300

dp203 question

Question #55

You have an Azure subscription that contains a server named Server1. Server1 hosts two Azure SQL databases named DB1 and DB2.

You plan to deploy a Windows app named App1 that will authenticate to DB2 by using SQL authentication.

You need to ensure that App1 can access DB2. The solution must meet the following requirements:

- ⇒ App1 must be able to view only DB2.
- ⇒ Administrative effort must be minimized.

What should you create?

A) a contained database user for App1 on DB2 (Correct Answer)

- B) a login for App1 on Server1
- C) a contained database user from an external provider for App1 on DB2
- D) a contained database user from a Windows login for App1 on DB2

Explanation

Correct Answer:

A

Use contained database users to authenticate SQL Server and SQL Database connections at the database level. A contained database is a database that is isolated from other databases and from the instance of SQL Server/ SQL Database (and the master database) that hosts the database. SQL Server supports contained database users for both Windows and SQL Server authentication.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/contained-database-users-making-your-database-portable?view=sql-server-ver15>

Community Discussion

It's correct. Login to server will get access at all database in the server and it is not possible. External provider and windows login aren't SQL authentication

Correcr answer

Selected Answer: A

The question specify "by using SQL authentication". So is NOT External Provider or Windows login, but only Contained Database use.

Question #56

You create five Azure SQL Database instances on the same logical server. In each database, you create a user for an Azure Active Directory (Azure AD) user named User1. User1 attempts to connect to the logical server by using Azure Data Studio and receives a login error. You need to ensure that when User1 connects to the logical server by using Azure Data Studio, User1 can see all the databases. What should you do?

A) Create User1 in the master database. (Correct Answer)

- B) Assign User1 the db_datareader role for the master database.
- C) Assign User1 the db_datareader role for the databases that User1 creates.
- D) Grant SELECT on sys.databases to public in the master database.

Explanation

Correct Answer:

A

Logins and users: A user account in a database can be associated with a login that is stored in the master database or can be a user name that is stored in an individual database.

A login is an individual account in the master database, to which a user account in one or more databases can be linked. With a login, the credential information for the user account is stored with the login.

A user account is an individual account in any database that may be, but does not have to be, linked to a login. With a user account that is not linked to a login, the credential information is stored with the user account.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/logins-create-manage>

Community Discussion

Answer is correct knowing that granting select permissions to the public role in the master database will not impact User1, since this user is contained. The public role in Azure SQL Database only exists at the database-level.

Selected Answer: A

Answer A looks correct

Selected Answer: A

I think the answer is correct. A. Create User1 in the master database.

Question #57

You have an Azure virtual machine named VM1 on a virtual network named VNet1. Outbound traffic from VM1 to the internet is blocked.

You have an Azure SQL database named SqlDb1 on a logical server named SqlSrv1.

You need to implement connectivity between VM1 and SqlDb1 to meet the following requirements:

- ⇒ Ensure that VM1 cannot connect to any Azure SQL Server other than SqlSrv1.
- ⇒ Restrict network connectivity to SqlSrv1.

What should you create on VNet1?

- A) a VPN gateway
- B) a service endpoint
- C) a private endpoint (Correct Answer)**
- D) an ExpressRoute gateway

Explanation

Correct Answer:

C

A private endpoint is a network interface that uses a private IP address from your virtual network. This network interface connects you privately and securely to a service powered by Azure Private Link. By enabling a private endpoint, you're bringing the service into your virtual network.

The service could be an Azure service such as:

- ⇒ Azure Storage
- ⇒ Azure Cosmos DB

- ⇒ Azure SQL Database
- ⇒ Your own service using a Private Link Service.

Reference:

<https://docs.microsoft.com/en-us/azure/private-link/private-endpoint-overview>

Community Discussion

Service Endpoints are targeted at VNets/Subnets. Private Link is targeted at individual entities, in this scenario VM1 to SqlDb1. The question requires that VM1 only be able to connect to SqlDb1. There may be other SQL Databases on SqlSrv1. Answer must be Private Link.

answer is correct. Azure Private Link allows you to access Azure PaaS service over Private IP address within the VNet. It gets a new private IP on your VNet. When you send traffic to PaaS resource, it will always ensure traffic stays within your VNet.

I think is the other way around: <https://docs.microsoft.com/en-us/azure/private-link/private-link-faq#:%text=Traffic%20can%20reach%20the%20service,the%20private%20endpoint%20is%20configured.>

I think is the other way around: <https://docs.microsoft.com/en-us/azure/private-link/private-link-faq#:%text=Traffic%20can%20reach%20the%20service,the%20private%20endpoint%20is%20configured.>

I think is the other way around: <https://docs.microsoft.com/en-us/azure/private-link/private-link-faq#:%text=Traffic%20can%20reach%20the%20service,the%20private%20endpoint%20is%20configured.>

Question #58

HOTSPOT -

You have an Azure SQL database named db1 that contains an Azure Active Directory (Azure AD) user named user1.

You need to test impersonation of user1 in db1 by running a SELECT statement and returning to the original execution context.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

EXECUTE AS  = 'user1@contoso.com'

CALLER
LOGIN
OWNER
USER

GO

SELECT SUSER_SNAME()


REVERT
REVOKE
ROLLBACK

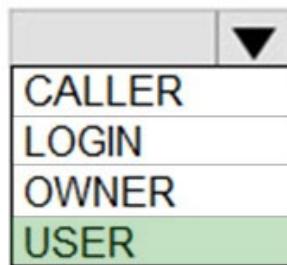
GO

Explanation

Correct Answer:

Answer Area

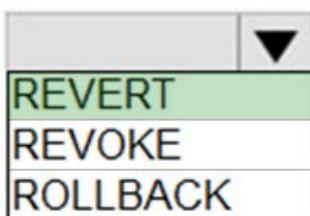
EXECUTE AS



= 'user1@contoso.com'

GO

SELECT SUSER_SNAME()



GO

Box 1: USER -

Using EXECUTE AS and REVERT to switch context.

The following example creates a context execution stack using multiple principals. The REVERT statement is then used to reset the execution context to the previous caller.

**

EXECUTE AS USER = 'user2';

--The following REVERT statements will reset the execution context to the previous context.

REVERT;

**

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/execute-as-transact-sql?view=sql-server-ver15> <https://docs.microsoft.com/en-us/sql/t-sql/functions/suser-sname-transact-sql?view=sql-server-ver15>

Community Discussion

The answer is correct.

<https://en.dirceuresende.com/blog/sql-server-how-to-use-execute-as-to-execute-commands-as-another-impersonate-user-and-how-to-prevent-it/>

your link doesn't work anymore

your link doesn't work anymore

Question #59

DRAG DROP -

You have an Azure SQL database named DB1. DB1 contains a table that has a column named Col1.

You need to encrypt the data in Col1.

Which four actions should you perform for DB1 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:

Actions

Create a database master key.

Create a column master key.

Open the symmetric key.

Create a certificate.

Update Col1.

Create a symmetric key.

Answer Area



Explanation

Correct Answer:

Actions**Create a column master key.****Update Col1.****Answer Area****Create a database master key.****Create a certificate.****Create a symmetric key.****Open the symmetric key.**

Use the following steps for column level encryption:

1. Create a database master key (Step 1)
2. Create a self-signed certificate for SQL Server (Step 2)
3. Configure a symmetric key for encryption (Step 3)
4. Encrypt the column data (this includes Open the symmetric key - Step 4)
5. Query and verify the encryption

Step 1: Create a database master key

Create a database master key for column level SQL Server encryption

In this first step, we define a database master key and provide a password to protect it. It is a symmetric key for protecting the private keys and asymmetric keys.

Step 2: Create a certificate.

Create a self-signed certificate for Column level SQL Server encryption

In this step, we create a self-signed certificate using the CREATE CERTIFICATE statement. You might have seen that an organization receives a certificate from a certification authority and incorporates into their infrastructures. In SQL Server, we can use a self-signed certificate without using a certification authority certificate.

Step 3: Create a symmetric key.

Configure a symmetric key for column level SQL Server encryption.

In this step, we will define a symmetric key that you can see in the encryption hierarchy as well. The symmetric key uses a single key for encryption and decryption as well.

Step 4: Open the symmetric key -

Data encryption.

Let's encrypt the data in this newly added column.

In a query window, open the symmetric key and decrypt using the certificate. We need to use the same symmetric key and certificate name that we created earlier

Etc.

Reference:

<https://www.sqlshack.com/an-overview-of-the-column-level-sql-server-encryption/>

Community Discussion

Create a certificate Create a symmetric key Open the symmetric key Update Col1

I believe Create column master key is for ALWAYS ENCRYPTED, so B is not part of this. Looks like provided answer is correct. 1. Create database master key 2. CREATE CERTIFICATE 3. CREATE SYMMETRIC KEY 4. Open symmetric key 5. Update data (have to open symmetric key first, according to sample script on MS article) <https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data?view=sql-server-ver16>

<https://learn.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data?view=sql-server-ver16>

<https://learn.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data?view=sql-server-ver16>

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data?view=sql-server-ver16#example-encrypt-with-symmetric-encryption-and-authenticator>

Question #60

HOTSPOT -

You have a Microsoft SQL Server database named DB1 that contains a table named Table1.

The database role membership for a user named User1 is shown in the following exhibit.

Database User - User1

Select a page

- General
- Owned Schemas
- Membership**
- Securables
- Extended Properties

Script Help

Database role membership.

Role Members

- db_accessadmin
- db_backupoperator
- db_datareader
- db_datawriter
- db_ddladmin
- db_denydatareader
- db_denydatawriter
- db_owner
- db_securityadmin
- External Sales
- Far West Sales
- Great Lakes Sales
- Mideast Sales
- New England Sales
- Plains Sales
- Rocky Mountain Sales
- SalesSchemaDeny
- SalesSchemaRead
- Southeast Sales
- Southwest Sales
- WebsiteExecute

Connection

Server: localhost
Connection: DCAC\meagan

[View connection properties](#)

Progress

Ready

OK Cancel

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

User1 can [answer choice].

add a column to Table1
delete a row from Table1
drop Table1

To ensure that User1 can run queries to retrieve data from DB1, you must assign User1 the [answer choice] database role.

db_datareader
db_ddladmin
db_denydatareader
db_denydatawriter

Explanation

SecExams

Correct Answer:

Answer Area

User1 can [answer choice].

add a column to Table1
delete a row from Table1
drop Table1

To ensure that User1 can run queries to retrieve data from DB1, you must assign User1 the [answer choice] database role.

db_datareader
db_ddladmin
db_denydatareader
db_denydatawriter

Box 1: delete a row from Table1 -

Members of the db_datawriter fixed database role can add, delete, or change data in all user tables.

Box 2: db_datareader -

Members of the db_datareader fixed database role can read all data from all user tables.

Reference:

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

Community Discussion

Members of the db_datawriter fixed database role can add, delete, or change data in all user tables. Members of the db_datareader fixed database role can read all data from all user tables and views. User objects can exist in any schema except sys and INFORMATION_SCHEMA.

DB_DATAWRITER: Members of the db_datawriter fixed database role can add, delete, or change data in all user tables. In most use cases this role will be combined with db_datareader membership to allow reading the data that is to be modified.

DB_DATAREADER: Members of the db_datawriter fixed database role can add, delete, or change data in all user tables. In most use cases this role will be combined with db_datareader membership to allow reading the data that is to be modified. <https://learn.microsoft.com/en-us/sql/relational-databases/security/authentication-access/database-level-roles?view=sql-server-ver16>

Within the database, db_datawriter allows users with the role to insert, update, or delete data in any user table or view in a database. The db_ddladmin role provides permissions for the user to modify any the schema of a database with Data Definition Language commands. The permissions for these two roles do not overlap.

Members of the db_datawriter fixed database role can add, delete, or change data in all user tables. Members of the db_ddladmin fixed database role can run any Data Definition Language (DDL) command in a database.

Question #61

You have an Azure subscription that contains a logical SQL server named Server1. The master database of Server1 contains a user named User1. You need to ensure that User1 can create databases on Server1.

Which database role should you assign to User1?

- A) db_owner
- B) dbmanager (Correct Answer)**
- C) dbo
- D) db_ddladmin

Explanation

Correct Answer:

B

dbmanager: Can create and delete databases. A member of the dbmanager role that creates a database, becomes the owner of that database, which allows that user to connect to that database as the dbo user. The dbo user has all database permissions in the database. Members of the dbmanager role don't necessarily have permission to access databases that they don't own.

Reference:

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

Community Discussion

Correct. Reflects MeasureUp suggestions.

need to pay attention to db_owner and dbmanager

look correct

The answer is correct. The key word is in the question is master database, the dbmanager role exists in the virtual master database and allows members to create and delete databases.

Selected Answer: B

<https://learn.microsoft.com/en-us/sql/relational-databases/security/authentication-access/database-level-roles?view=sql-server-ver16> Special roles for Azure SQL Database and Azure Synapse: Role name Description dbmanager Can create and delete databases. A member of the dbmanager role that creates a database, becomes the owner of that database, which allows that user to connect to that database as the dbo user. The dbo user has all database permissions in the database. Members of the dbmanager role don't necessarily have permission to access databases that they don't own.

Question #62

You have an on-premises Microsoft SQL Server 2019 instance named SQL1 that hosts a database named db1. You have an Azure subscription that contains an Azure SQL managed instance named MI1 and an Azure Storage account named storage1.

You plan to migrate db1 to MI1 by using the backup and restore process.

You need to ensure that you can back up db1 to storage1. The solution must meet the following requirements:

- ⇒ Use block blob storage.
- ⇒ Maximize security.

What should you do on storage1?

A) Generate a shared access signature (SAS).

B) Create an access policy.

C) Rotate the storage keys.

D) Enable infrastructure encryption. (Correct Answer)

Explanation

Correct Answer:

D

If your database contains sensitive data that is protected by Always Encrypted, migration process using Azure Data Studio with DMS will automatically migrate your Always Encrypted keys to your target SQL Server on Azure Virtual Machine.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-virtual-machine-online-ads>

Community Discussion

Selected Answer: A

To ensure that you can back up db1 to storage1 and meet the requirements, you should generate a shared access signature (SAS) on storage1. A SAS is a URI that grants restricted access rights to storage objects. By using a SAS URI, you can delegate access to resources in your storage account, such as a container or a blob, without exposing your account key. Option B is incorrect because creating an access policy does not provide block blob storage or maximize security. Option C is incorrect because rotating the storage keys

does not address the requirements for using block blob storage and maximizing security. Option D is incorrect because enabling infrastructure encryption does not address the requirement for using block blob storage.

Selected Answer: A

Correct answer is A

Correct Answer: A Generate a shared access signature (SAS). please review link <https://learn.microsoft.com/en-us/azure/azure-sql/migration-guides/managed-instance/sql-server-to-managed-instance-guide?view=azuresql#backup-and-restore> For backup and restore process first you need to backup to Azure Storage and in order to authenticate to Azure Storage first you need to create SAS through which authentication would be done and .bak file would be created on Azure storage

Selected Answer: A

The problem did not say the database have sensitive data

Selected Answer: D

Enable infrastructure encryption is the correct answer because we are backing up the database to Azure storage account from ON prem and Question is about what should you do on storage account in this specific situation, when creating storage account, in advanced tab, we have option to "Enable infrastructure encryption" for more secure purpose. "Shared ACCESS Signature" DOESNOT even come in picture when backing up database from ON PREM server to Azure storage account.

Question #63

You have an Azure SQL database named DB1.

A user named User1 has an Azure Active Directory (Azure AD) account.

You need to provide User1 with the ability to add and remove columns from the tables in DB1. The solution must use the principle of least privilege.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) Assign the database user the db_owner role.

B) Create a contained database user.

C) Create a login and an associated database user. (Correct Answer)

D) Assign the database user the db_ddladmin role. (Correct Answer)**Explanation**

Correct Answer:

CD

C: Logins and users: A user account in a database can be associated with a login that is stored in the master database or can be a user name that is stored in an individual database.

A login is an individual account in the master database, to which a user account in one or more databases can be linked. With a login, the credential information for the user account is stored with the login.

A user account is an individual account in any database that may be, but does not have to be, linked to a login. With a user account that is not linked to a login, the credential information is stored with the user account.

D: db_ddladmin: Members of the db_ddladmin fixed database role can run any Data Definition Language (DDL) command (such as adding and removing columns) in a database.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/logins-create-manage>

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

Community Discussion

D is correct. However, you could also select B or C because User1 has an Azure Active Directory (Azure AD) account. So you could create a contained database user with the Azure AD account, or you could create a Login and User with the Azure AD account. Since principle of least privilege is mentioned, wouldnt a contained Azure AD User be the better option?

Selected Answer: BD

As the solution must use the principle of least privilege then we should create a contained DB user (we can do it using an AD account or using SQL Server authentication due to both are allowed to create contained DB users)

Agreed @lukelin08

Agreed @lukelin08

B. Create a contained database user. D. Assign the database user the db_ddladmin role.

Question #64

You have an Azure SQL database named sqlldb1.

You need to minimize the possibility of Query Store transitioning to a read-only state.

What should you do?

- A) Double the value of Data Flush interval
- B) Decrease by half the value of Data Flush Interval (Correct Answer)**
- C) Double the value of Statistics Collection Interval
- D) Decrease by half the value of Statistics Collection interval

Explanation

SecExams

Correct Answer:

B

The Max Size (MB) limit isn't strictly enforced. Storage size is checked only when Query Store writes data to disk. This interval is set by the Data Flush Interval (Minutes) option. If Query Store has breached the maximum size limit between storage size checks, it transitions to read-only mode.

Incorrect Answers:

C: Statistics Collection Interval: Defines the level of granularity for the collected runtime statistic, expressed in minutes. The default is 60 minutes. Consider using a lower value if you require finer granularity or less time to detect and mitigate issues. Keep in mind that the value directly affects the size of Query Store data.

Reference:

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

Community Discussion

From my point of view, the correct answer is C. (Double the value of Statistics Collection Interval). To avoid Query Store transitioning to read-only state, the runtime statistics for the Last Stale Query Threshold days must fit in the defined Max Size (MB). If the Statistics Collection Interval is increased then less space will be used for the persisted runtime

statistics and there will be more free space for new data. The Data Flush Interval can delay the transitioning to read-only state, but not minimize the possibility it occurs.

in microsoft prep test ,this question says B. Decrease Data Flush Interval.

Selected Answer: B

This clears up the confusion in MS documentation...it specifically states that Flush parameters are what controls Max DB store <https://docs.microsoft.com/en-us/sql/relational-databases/performance/how-query-store-collects-data?view=sql-server-ver15#remarks>

Selected Answer: B

<https://learn.microsoft.com/en-us/sql/relational-databases/performance/manage-the-query-store?view=sql-server-ver16&tabs=ssms> Stale Query Threshold (Days): Time-based cleanup policy that controls the retention period of persisted runtime statistics and inactive queries, expressed in days. By default, Query Store is configured to keep the data for 30 days, which might be unnecessarily long for your scenario. Avoid keeping historical data that you don't plan to use. This practice reduces changes to read-only status. The size of Query Store data and 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: SQL Copy ALTER DATABASE [QueryStoreDB] SET QUERY_STORE (CLEANUP_POLICY = (STALE_QUERY_THRESHOLD_DAYS = 90));

After reading through that, I think B.

Question #65

You have SQL Server 2019 on an Azure virtual machine that runs Windows Server 2019. The virtual machine has 4 vCPUs and 28 GB of memory.

You scale up the virtual machine to 16 vCPUs and 64 GB of memory.

You need to provide the lowest latency for tempdb.

What is the total number of data files that tempdb should contain?

- A) 2
- B) 4
- C) 8 (Correct Answer)**
- D) 64

Explanation

Correct Answer:

C

The number of files depends on the number of (logical) processors on the machine. As a general rule, if the number of logical processors is less than or equal to eight, use the same number of data files as logical processors. If the number of logical processors is greater than eight, use eight data files and then if contention continues, increase the number of data files by multiples of 4 until the contention is reduced to acceptable levels or make changes to the workload/code.

Reference:

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

Community Discussion

Answer should be 'C. 8 TempDb Files'

Exact same question earlier on listed answer as 64 files. Now same question and answer is 8 . LOL

Not the same, read the explanation "If the number of logical processors is greater than eight....". In that case there were 16 vCPUs. Here 8 is not greater than 8

Not the same, read the explanation "If the number of logical processors is greater than eight....". In that case there were 16 vCPUs. Here 8 is not greater than 8

Selected Answer: C

If the number of logical processors is greater than eight (8), use eight data files. If contention continues, increase the number of data files by multiples of four (4) up to the number of logical processors until the contention is reduced to acceptable levels.

Alternatively, make changes to the workload or code. <https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Question #66

HOTSPOT -

You have an Azure SQL database named db1.

You need to retrieve the resource usage of db1 from the last week.

How should you complete the statement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

SELECT *

FROM

sys.dm_db_resource_stats
sys.dm_exec_requests
sys.dm_user_db_resource_governance
sys.resource_stats

WHERE database_name = 'db1' AND

start_time >

(day, -7, GETDATE())

DATEADD
DATEDIFF
DATEPART
TODATETIMEOFFSET

ORDER BY start_time DESC;

Explanation

Correct Answer:

Answer Area

```

SELECT *
FROM
    sys.dm_db_resource_stats
    sys.dm_exec_requests
    sys.dm_user_db_resource_governance
    sys.resource_stats
WHERE database_name = 'db1' AND
    start_time > (day, -7, GETDATE())
ORDER BY start_time DESC;

```

Box 1: sys.resource_stats -

sys.resource_stats returns CPU usage and storage data for an Azure SQL Database. It has database_name and start_time columns.

Box 2: DateAdd -

The following example returns all databases that are averaging at least 80% of compute utilization over the last one week.

```

DECLARE @s datetime;
DECLARE @e datetime;
SET @s= DateAdd(d,-7,GetUTCDate());
SET @e= GETUTCDATE();
SELECT database_name, AVG(avg_cpu_percent) AS Average_Compute_Utilization

```

FROM sys.resource_stats -

WHERE start_time BETWEEN @s AND @e

GROUP BY database_name -

HAVING AVG(avg_cpu_percent) >= 80

Incorrect Answers:

sys.dm_exec_requests:

sys.dm_exec_requests returns information about each request that is executing in SQL Server. It does not have a column named database_name. sys.dm_db_resource_stats:
sys.dm_db_resource_stats does not have any start_time column.

Note: sys.dm_db_resource_stats returns CPU, I/O, and memory consumption for an Azure SQL Database database. One row exists for every 15 seconds, even if there is no activity in the database. Historical data is maintained for approximately one hour.

Sys.dm_user_db_resource_governance returns actual configuration and capacity settings

used by resource governance mechanisms in the current database or elastic pool. It does not have any start_time column.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/system-catalog-views/sys-resource-stats-azure-sql-database>

Community Discussion

sys.dm_db_resource_stats: This DMV records a snapshot of resource usage for the database every 15 seconds (kept for 1 hour). sys.resource_stats: This can be run in the context of the master database of the Azure SQL Database server to see resource usage for all Azure SQL Database databases associated with the server. This view is less granular and shows resource usage every 5 minutes (kept for 14 days). sys.resource_stats is the correct answer due to two reason 1. it holds data for 14 days while the other one holds data for 1 hour only. 2.. It has start_time column while the other one does not have it.

Answers are correct. 1. sys.dm_db_resource_stats can't be because only keep data by 1h. sys.resource_stats can keep by 14days. 2.dateadd is correct

Answer is given correct <https://docs.microsoft.com/en-us/sql/relational-databases/system-catalog-views/sys-resource-stats-azure-sql-database?view=azuresqldb-current>
see the example section you will understand

Answer is correct

Sys.dm_db_resource_stats has not got 'start time' column answer is sys.resource_stats

Question #67

You have 50 Azure SQL databases.

You need to notify the database owner when the database settings, such as the database size and pricing tier, are modified in Azure.

What should you do?

- A) Create a diagnostic setting for the activity log that has the Security log enabled.
- B) For the database, create a diagnostic setting that has the InstanceAndAppAdvanced metric enabled.

C) Create an alert rule that uses a Metric signal type.

D) Create an alert rule that uses an Activity Log signal type. (Correct Answer)

Explanation

Correct Answer:

D

Activity log events - An alert can trigger on every event, or, only when a certain number of events occur.

The activity log of a database logs the change for the SKU (Stock-keeping-Unit) change.

Incorrect Answers:

C: Metric values - The alert triggers when the value of a specified metric crosses a threshold you assign in either direction. That is, it triggers both when the condition is first met and then afterwards when that condition is no longer being met.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/alerts-insights-configure-portal>

Community Discussion

The answer is correct.

D is correct answer Signal type: The type of alert rule you're creating. Types of alerts:

Metric alerts: evaluate resource metrics at regular intervals. Log alerts: allow users to use a Log Analytics query to evaluate resource logs at a predefined frequency Activity log alerts: Are triggered when a new activity log event occurs that matches defined conditions. Resource Health alerts and Service Health alerts are activity log alerts that report on your service and resource health. Smart detection alerts: <https://learn.microsoft.com/en-us/azure/azure-monitor/alerts/alerts-overview#types-of-alerts>

Answer is correct. <https://docs.microsoft.com/en-us/answers/questions/138020/auto-alert-when-compute-tier-of-azure-sql-is-chang.html>

Question #68

You have several Azure SQL databases on the same Azure SQL Database server in a resource group named ResourceGroup1.

You must be alerted when CPU usage exceeds 80 percent for any database. The solution must apply to any additional databases that are created on the Azure SQL server.

Which resource type should you use to create the alert?

- A) Resource Groups
- B) SQL Servers
- C) SQL Databases (Correct Answer)**
- D) SQL Virtual Machines

Explanation



Correct Answer:

C

There are resource types related to application code, compute infrastructure, networking, storage + databases.

You can deploy up to 800 instances of a resource type in each resource group.

Some resources can exist outside of a resource group. These resources are deployed to the subscription, management group, or tenant. Only specific resource types are supported at these scopes.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/resource-providers-and-types>

Community Discussion

Alerts cannot be set at the resource group or Logical SQL server level, So it has to be "SQL Database"

I have checked in Lab. In SQL Database we can create CPU percentage alert rule.

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/resource-providers-and-types> the answer is in this link

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/resource-providers-and-types> the answer is in this link

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/resource-providers-and-types> the answer is in this link

Question #69

You have SQL Server 2019 on an Azure virtual machine that runs Windows Server 2019. The virtual machine has 4 vCPUs and 28 GB of memory.

You scale up the virtual machine to 8 vCPUs and 64 GB of memory.

You need to provide the lowest latency for tempdb.

What is the total number of data files that tempdb should contain?

- A) 2
- B) 4
- C) 8 (Correct Answer)**
- D) 64

Explanation

Correct Answer:

C

The number of files depends on the number of (logical) processors on the machine. As a general rule, if the number of logical processors is less than or equal to eight, use the same number of data files as logical processors. If the number of logical processors is greater than eight, use eight data files and then if contention continues, increase the number of data files by multiples of 4 until the contention is reduced to acceptable levels or make changes to the workload/code.

Reference:

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

Community Discussion

16 vCPUs = 8 CPUs = 8 Tempdb data files.

In my view, we need to focus on last sentence - "What is the total number of data files that tempdb should contain?" While 8 is best practice, we can reach up to 64 (in this scenario) during the course of minimizing contention. So answer is 64.

Please ignore my above comment, confused with RAM. I go with 8.

Please ignore my above comment, confused with RAM. I go with 8.

Selected Answer: C

≥ 8 to $< 32 = \text{No. of Cores}/2$ $\geq 32 = \text{No. of Cores}/4$ So here answer is 8

Question #70

You have SQL Server on an Azure virtual machine that contains a database named DB1. DB1 contains a table named CustomerPII.

You need to record whenever users query the CustomerPII table.

Which two options should you enable? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) server audit specification
- B) SQL Server audit (Correct Answer)**
- C) database audit specification (Correct Answer)**
- D) a server principal

Explanation

Correct Answer:

BC

Auditing an instance of SQL Server or a SQL Server database involves tracking and logging events that occur on the system. The SQL Server Audit object collects a single instance of server-level or database-level actions and groups of actions to monitor. The audit is at the SQL Server instance level. You can have multiple audits per SQL Server instance. The Database-Level Audit Specification object belongs to an audit. You can create one database audit specification per SQL Server database per audit.

Reference:

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

Community Discussion

B, C. On SQL Server you need SQL Server audit and database audit specification that belongs to that SQL Server audit. Auditing in SQL Server differs from Azure SQL Server and server audit specification collects different things than database audit specifications where in Azure SQL Server Server and Database audits they are basically the same thing and only configured on the server or the database level.

ref: <https://docs.microsoft.com/en-us/sql/relational-databases/security/auditing/create-a-server-audit-and-database-audit-specification?view=sql-server-ver15> should be
B, C USE master ; GO -- Create the server audit. CREATE SERVER AUDIT
Payrole_Security_Audit TO FILE (FILEPATH = 'C:\Program Files\Microsoft SQL
Server\MSSQL13.MSSQLSERVER\MSSQL\DATA') ; GO -- Enable the server audit. ALTER
SERVER AUDIT Payrole_Security_Audit WITH (STATE = ON) ; USE AdventureWorks2012 ; GO
-- Create the database audit specification. CREATE DATABASE AUDIT SPECIFICATION
Audit_Pay_Tables FOR SERVER AUDIT Payrole_Security_Audit ADD (SELECT , INSERT ON
HumanResources.EmployeePayHistory BY dbo) WITH (STATE = ON) ; GO

Database audit specification needs its parent component (Server Audit) answer: B,C

The SQL Server in Question is on an Azure VM, so that makes its a regular SQL (not Azure
SQL), this should be B and C

Selected Answer: BC

Answer Is B&C

Question #71

You have an Azure virtual machine based on a custom image named VM1.

VM1 hosts an instance of Microsoft SQL Server 2019 Standard.

You need to automate the maintenance of VM1 to meet the following requirements:

- ⇒ Automate the patching of SQL Server and Windows Server.
- ⇒ Automate full database backups and transaction log backups of the databases on VM1.
- ⇒ Minimize administrative effort.

What should you do first?

- A) Enable a system-assigned managed identity for VM1
- B) Register the Azure subscription to the Microsoft.Sql resource provider
- C) Install an Azure virtual machine Desired State Configuration (DSC) extension on VM1
- D) Register the Azure subscription to the Microsoft.SqlVirtualMachine resource provider
(Correct Answer)**

Explanation

Correct Answer:

D

Automated Patching depends on the SQL Server infrastructure as a service (IaaS) Agent Extension. The SQL Server IaaS Agent Extension (SqlIaaSExtension) runs on Azure virtual machines to automate administration tasks. The SQL Server IaaS extension is installed when you register your SQL Server VM with the SQL Server VM resource provider.

To utilize the SQL IaaS Agent extension, you must first register your subscription with the Microsoft.SqlVirtualMachine provider, which gives the SQL IaaS extension the ability to create resources within that specific subscription.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/sql-server-iaas-agent-extension-automate-management> <https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/sql-agent-extension-manually-register-single-vm?tabs=bash%2Cazure-cli>

Community Discussion

Answer is D: <https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/sql-server-on-azure-vm-iaas-what-is-overview>

correct answer. the correct link is <https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/sql-agent-extension-manually-register-single-vm?tabs=bash%2Cazure-cli>

To register your SQL Server VM with the SQL IaaS Agent extension, you must first register your subscription with the Microsoft.SqlVirtualMachine resource provider (RP).

To register your SQL Server VM with the extension, you'll need: An Azure subscription. An Azure Resource Model supported Windows Server virtual machine with a supported SQL Server version deployed to the public or Azure Government cloud. The client credentials used to register the virtual machine exists in any of the following Azure roles: Virtual Machine contributor, Contributor, or Owner. The latest version of Azure CLI or Azure PowerShell (5.0 minimum). A minimum of .NET Framework 4.5.1 or later. To verify that none of the limitations apply to you. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/sql-agent-extension-manually-register-single-vm?view=azuresql&tabs=azure-portal>

Question #72

HOTSPOT -

You are building an Azure Stream Analytics job to retrieve game data.

You need to ensure that the job returns the highest scoring record for each five-minute time interval of each game.

How should you complete the Stream Analytics query? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
SELECT [▼] as HighestScore
    Collect(Score)
    CollectTop(1)OVER(ORDER BY Score Desc)
    Game, MAX(Score)
    TopOne() OVER(PARTITION BY Game ORDER BY Score Desc)

    FROM input TIMESTAMP BY CreatedAt

    GROUP BY [▼]
        Game
        Hopping(minute, 5)
        Tumbling(minute, 5)
        Windows(TumblingWindow(minute, 5), Hopping(minute, 5))
```

Explanation

Correct Answer:

Answer Area

```

SELECT [▼] as HighestScore
    Collect(Score)
    CollectTop(1)OVER(ORDER BY Score Desc)
    Game, MAX(Score)
    TopOne() OVER(PARTITION BY Game ORDER BY Score Desc)

FROM input TIMESTAMP BY CreatedAt

GROUP BY [▼]
    Game
    Hopping(minute, 5)
    Tumbling(minute, 5)
    Windows(TumblingWindow(minute, 5), Hopping(minute, 5))

```

Box 1: TopOne() OVER(PARTITION BY Game ORDER BY Score Desc)

TopOne returns the top-rank record, where rank defines the ranking position of the event in the window according to the specified ordering. Ordering/ranking is based on event columns and can be specified in ORDER BY clause.

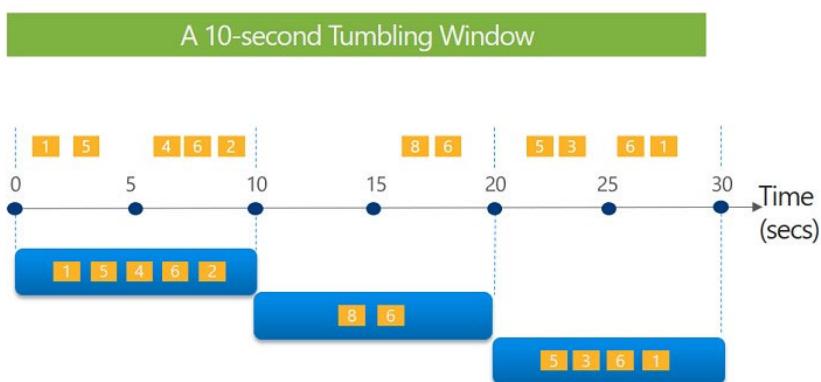
Analytic Function Syntax:

TopOne() OVER ([<PARTITION BY clause>] ORDER BY (<column name> [ASC |DESC])+ <LIMIT DURATION clause> [<WHEN clause>])

Box 2: Tumbling(minute 5)

Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.

Tell me the count of Tweets per time zone every 10 seconds



```

SELECT TimeZone, COUNT(*) AS Count
FROM TwitterStream TIMESTAMP BY CreatedAt
GROUP BY TimeZone, TumblingWindow(second,10)

```

Reference:

<https://docs.microsoft.com/en-us/stream-analytics-query/topone-azure-stream->

analytics <https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/stream-analytics/stream-analytics-window-functions.md>

Community Discussion

I got a similar question while taking a DP-203 exam. Don't think this is 100% question for DP-300

The answer looks right

That looks like your answer to most questions!

That looks like your answer to most questions!

I believe this question is outside the scope of DP-300 and for DP-203.

Question #73

A company plans to use Apache Spark analytics to analyze intrusion detection data.

You need to recommend a solution to analyze network and system activity data for malicious activities and policy violations. The solution must minimize administrative efforts.

What should you recommend?

- A) Azure Data Lake Storage
- B) Azure Databricks (Correct Answer)**
- C) Azure HDInsight
- D) Azure Data Factory

Explanation

Correct Answer:

B

Azure DataBricks does have integration with Azure Monitor. Application logs and metrics from Azure Databricks can be sent to a Log Analytics workspace.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/databricks-monitoring/application-logs>

Community Discussion

Azure Databricks is correct. Minimize admin effort is a key word.

Check this out Azure HDInsight offers pre-made, monitoring dashboards in the form of solutions that can be used to monitor the workloads running on your clusters. There are solutions for Apache Spark, Hadoop, Apache Kafka, live long and process (LLAP), Apache HBase, and Apache Storm available in the Azure Marketplace. Please see our documentation to learn how to install a monitoring solution. These solutions are workload-specific, allowing you to monitor metrics like central processing unit (CPU) time, available YARN memory, and logical disk writes across multiple clusters of a given type. Selecting a graph takes you to the query used to generate it, shown in the logs view.

Check this out Azure HDInsight offers pre-made, monitoring dashboards in the form of solutions that can be used to monitor the workloads running on your clusters. There are solutions for Apache Spark, Hadoop, Apache Kafka, live long and process (LLAP), Apache HBase, and Apache Storm available in the Azure Marketplace. Please see our documentation to learn how to install a monitoring solution. These solutions are workload-specific, allowing you to monitor metrics like central processing unit (CPU) time, available YARN memory, and logical disk writes across multiple clusters of a given type. Selecting a graph takes you to the query used to generate it, shown in the logs view.

Selected Answer: C

HDInsight monitoring solutions Azure HDInsight offers pre-made, monitoring dashboards in the form of solutions that can be used to monitor the workloads running on your clusters. There are solutions for Apache Spark, Hadoop, Apache Kafka, live long and process (LLAP), Apache HBase, and Apache Storm available in the Azure Marketplace. Please see our documentation to learn how to install a monitoring solution. These solutions are workload-specific, allowing you to monitor metrics like central processing unit (CPU) time, available YARN memory, and logical disk writes across multiple clusters of a given type. Selecting a graph takes you to the query used to generate it, shown in the logs view.

Azure DataBricks are not part of the DP-300 exam.

Question #74

DRAG DROP -

Your company analyzes images from security cameras and sends alerts to security teams that respond to unusual activity. The solution uses Azure Databricks.

You need to send Apache Spark level events, Spark Structured Streaming metrics, and application metrics to Azure Monitor.

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

Select and Place:

Actions

Answer Area

Deploy Grafana to an Azure virtual machine.



Build a **spark-listeners-loganalytics-1.0-SNAPSHOT.jar** JAR file.



Create Dropwizard counters in the application code.



Create a data source in Azure Monitor.

Configure the Databricks cluster to use the Databricks monitoring library.

Explanation

Correct Answer:

Actions

Answer Area

Deploy Grafana to an Azure virtual machine.

Configure the Databricks cluster to use the Databricks monitoring library.

Build a **spark-listeners-loganalytics-1.0-SNAPSHOT.jar** JAR file.

Build a **spark-listeners-loganalytics-1.0-SNAPSHOT.jar** JAR file.

Create Dropwizard counters in the application code.

Create Dropwizard counters in the application code.



Create a data source in Azure Monitor.

Configure the Databricks cluster to use the Databricks monitoring library.

Send application metrics using Dropwizard.

Spark uses a configurable metrics system based on the Dropwizard Metrics Library. To send application metrics from Azure Databricks application code to Azure Monitor, follow these steps:

Step 1: Configure your Azure Databricks cluster to use the Databricksmonitoring library.

Prerequisite: Configure your Azure Databricks cluster to use the monitoring library.

Step 2: Build the spark-listeners-loganalytics-1.0-SNAPSHOT.jar JAR file

Step 3: Create Dropwizard counters in your application code

Create Dropwizard gauges or counters in your application code

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/databricks-monitoring/application-logs>

Community Discussion

is his related to DP-300?

I believe this is outside the scope of DP-300 and belongs to DP-203

I believe this is outside the scope of DP-300 and belongs to DP-203

-> Configure the Databricks cluster to use the Databricks monitoring library. -> Build a spark-listner-loganalytics-1.0-SNAPSHOT.jar JAR file. -> Create Dropwizard counters in the application code. <https://docs.microsoft.com/en-us/azure/architecture/databricks-monitoring/application-logs>

looks DP-300, what do you think?

Question #75

You have an Azure data solution that contains an enterprise data warehouse in Azure Synapse Analytics named DW1.

Several users execute adhoc queries to DW1 concurrently.

You regularly perform automated data loads to DW1.

You need to ensure that the automated data loads have enough memory available to complete quickly and successfully when the adhoc queries run.

What should you do?

A) Assign a smaller resource class to the automated data load queries.

B) Create sampled statistics to every column in each table of DW1.

C) Assign a larger resource class to the automated data load queries. (Correct Answer)

D) Hash distribute the large fact tables in DW1 before performing the automated data loads.

Explanation

Correct Answer:

C

The performance capacity of a query is determined by the user's resource class.

Smaller resource classes reduce the maximum memory per query, but increase concurrency.

Larger resource classes increase the maximum memory per query, but reduce concurrency.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/resource-classes-for-workload-management>

Community Discussion

Answer looks correct

Synapse Analytics is not part of the DP-300 exam.

I believe this is outside the scope of DP-300 and belongs to DP-203

DP-203 question, you can skip.

Question #76

You are monitoring an Azure Stream Analytics job.

You discover that the Backlogged input Events metric is increasing slowly and is consistently non-zero.

You need to ensure that the job can handle all the events.

What should you do?

A) Remove any named consumer groups from the connection and use \$default.

B) Change the compatibility level of the Stream Analytics job.

C) Create an additional output stream for the existing input stream.

D) Increase the number of streaming units (SUs). (Correct Answer)

Explanation

Correct Answer:

D

Backlogged Input Events: Number of input events that are backlogged. A non-zero value for this metric implies that your job isn't able to keep up with the number of incoming events. If this value is slowly increasing or consistently non-zero, you should scale out your job, by increasing the SUs.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-monitoring>

Community Discussion

DP-203

looks correct

Azure Stream Analytics is out-of-scope of the DP-300 exam.

DP-203 question, you can skip.

Question #77

You have an Azure Stream Analytics job.

You need to ensure that the job has enough streaming units provisioned.

You configure monitoring of the SU % Utilization metric.

Which two additional metrics should you monitor? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Late Input Events
- B) Out of order Events

C) Backlogged Input Events (Correct Answer)

D) Watermark Delay (Correct Answer)

- E) Function Events

Explanation

Correct Answer:

CD

To react to increased workloads and increase streaming units, consider setting an alert of 80% on the SU Utilization metric. Also, you can use watermark delay and backlogged events metrics to see if there is an impact.

Note: Backlogged Input Events: Number of input events that are backlogged. A non-zero value for this metric implies that your job isn't able to keep up with the number of incoming events. If this value is slowly increasing or consistently non-zero, you should scale out your job, by increasing the SUs.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-monitoring>

Community Discussion

Selected Answer: CD

watermark and the number of backlogged events <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-monitoring> <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-time-handling>

DP-203

its ok?

DP-203 question, you can skip.

Azure Stream Analytics is outside the scope of the DP-300 exam.

Question #78

You have an Azure Databricks resource.

You need to log actions that relate to changes in compute for the Databricks resource.

Which Databricks services should you log?

A) clusters (Correct Answer)

- B) jobs
- C) DBFS
- D) SSH
- E) workspace

Explanation

Correct Answer:

A

Clusters logs include information regarding changes in compute.

Incorrect:

Not E: Workspace logs do not include information related to changes in compute.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/administration-guide/account-settings/azure-diagnostic-logs#configure-diagnostic-log-delivery>

Community Discussion

Selected Answer: A

To log actions that relate to changes in compute for an Azure Databricks resource, you should log the clusters service.

DP-203

DataBricks are outside the scope of the DP-300 exam.

Answer looks correct

DP-203 question, you can skip.

Question #79

Your company uses Azure Stream Analytics to monitor devices.

The company plans to double the number of devices that are monitored.

You need to monitor a Stream Analytics job to ensure that there are enough processing resources to handle the additional load.

Which metric should you monitor?

- A) Input Deserialization Errors
- B) Late Input Events
- C) Early Input Events

D) Watermark delay (Correct Answer)

Explanation

Correct Answer:

D

The Watermark delay metric is computed as the wall clock time of the processing node minus the largest watermark it has seen so far.

The watermark delay metric can rise due to:

1. Not enough processing resources in Stream Analytics to handle the volume of input events.
2. Not enough throughput within the input event brokers, so they are throttled.
3. Output sinks are not provisioned with enough capacity, so they are throttled.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-time-handling>

Community Discussion

DP-203

DP-203 question, you can skip.

Stream Analytics is not part of the DP-300 exam.

looks correct

Question #80

You manage an enterprise data warehouse in Azure Synapse Analytics.

Users report slow performance when they run commonly used queries. Users do not report performance changes for infrequently used queries.

You need to monitor resource utilization to determine the source of the performance issues.

Which metric should you monitor?

- A) Local tempdb percentage
- B) DWU percentage
- C) Data Warehouse Units (DWU) used
- D) Cache hit percentage (Correct Answer)**

Explanation

Correct Answer:

D

You can use Azure Monitor to view cache metrics to troubleshoot query performance.

The key metrics for troubleshooting the cache are Cache hit percentage and Cache used percentage.

Possible scenario: Your current working data set cannot fit into the cache which causes a low cache hit percentage due to physical reads. Consider scaling up your performance level and rerun your workload to populate the cache.

Reference:

<https://docs.microsoft.com/da-dk/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-how-to-monitor-cache>

Community Discussion

Selected Answer: D

Could be low cache hit ratio, because infrequent queries were already slower, so they don't notice any difference, but regular queries do now. Could also be tempdb as suggested, but then infrequent queries would also be affected depending on the query. Out of the options and unknowns, I would choose cache hit ratio.

D is correct. <https://docs.microsoft.com/en-us/da-dk/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-how-to-monitor-cache>

DP-203

If the cache hit ratio is low, it means that new or infrequent queries last a short time in the cache and their performance would be bad, but these types of queries have no problems. Therefore answer D is not correct

If the cache hit ratio is low, it means that new or infrequent queries last a short time in the cache and their performance would be bad, but these types of queries have no problems. Therefore answer D is not correct

Question #81

You have an Azure Synapse Analytics dedicated SQL pool named Pool1 and a database named DB1. DB1 contains a fact table named Table1.

You need to identify the extent of the data skew in Table1.

What should you do in Synapse Studio?

A) Connect to Pool1 and query sys.dmw_nodes_db_partition_stats. (Correct Answer)

- B) Connect to the built-in pool and run DBCC CHECKALLOC.
- C) Connect to Pool1 and run DBCC CHECKALLOC.
- D) Connect to the built-in pool and query sys.dmw_nodes_db_partition_stats.

Explanation

Correct Answer:

A

First connect to Pool1, not the built-in serverless pool, then use sys.dmw_nodes_db_partition_stats to analyze any skewness in the data.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/cheat-sheet>

Community Discussion

I think the correct answer is A, not D. Don't we have to connect to the dedicated pool to query the stats. DB1 is in a dedicated pool

Selected Answer: A

A is the correct answer.

It is A.

It is A.

Selected Answer: A

Option A

Question #82

You have an Azure Synapse Analytics dedicated SQL pool.

You run PDW_SHOWSPACEUSED('dbo.FactInternetSales'); and get the results shown in the following table.

ROWS	RESERVED_SPACE	DATA_SPACE	INDEX_SPACE	UNUSED_SPACE	PDW_NODE_ID	DISTRIBUTION_ID
694	2776	616	48	2112	1	1
407	2704	576	48	2080	1	2
53	2376	512	16	1848	1	3
58	2376	512	16	1848	1	4
168	2632	528	32	2072	1	5
195	2696	536	32	2128	1	6
5995	3464	1424	32	2008	1	7
0	2232	496	0	1736	1	8
264	2576	544	40	1992	1	9
3008	3016	960	32	2024	1	10
...
1550	2832	752	48	2032	1	50
1238	2832	696	40	2096	1	51
192	2632	528	32	2072	1	52
1127	2768	680	48	2040	1	53
1244	3032	704	64	2264	1	54
409	2632	568	32	2032	1	55
0	2232	496	0	1736	1	56
1437	2832	728	40	2064	1	57
0	2232	496	0	1736	1	58
384	2632	560	32	2040	1	59
225	2768	544	40	2184	1	60

Which statement accurately describes the dbo.FactInternetSales table?

- A) The table contains less than 10,000 rows.
- B) All distributions contain data.
- C) The table uses round-robin distribution
- D) The table is skewed. (Correct Answer)**

Explanation

Correct Answer:

D

The rows per distribution can vary up to 10% without a noticeable impact on performance. Here the distribution varies more than 10%. It is skewed.

Note: SHOWSPACEUSED displays the number of rows, disk space reserved, and disk space used for a specific table, or for all tables in a Azure Synapse Analytics or Parallel Data Warehouse database.

This is a very quick and simple way to see the number of table rows that are stored in each of the 60 distributions of your database. Remember that for the most balanced performance, the rows in your distributed table should be spread evenly across all the

distributions.

ROUND_ROBIN distributed tables should not be skewed. Data is distributed evenly across the nodes by design.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute> <https://github.com/rgl/azure-content/blob/master/articles/sql-data-warehouse/sql-data-warehouse-manage-distributed-data-skew.md>

Community Discussion

looks good, what do you think?

DP-203 question, you can skip.

This question is for DP-203 exam (Data Engineering on Microsoft Azure)

Question #83

DRAG DROP -

You have an Azure SQL managed instance named SQLMI1 that has Resource Governor enabled and is used by two apps named App1 and App2.

You need to configure SQLMI1 to limit the CPU and memory resources that can be allocated to App1.

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.

Select and Place:

Actions	Answer Area
Create a workload group.	
Create a user-defined classifier function.	
Modify Resource Governor.	
Create a contained database user.	
Create a resource pool.	

Explanation

Correct Answer:

Actions	Answer Area
Create a workload group.	
Create a user-defined classifier function.	
Modify Resource Governor.	
Create a contained database user.	
Create a resource pool.	

Reference:

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

[relational-databases/resource-governor/create-and-test-a-classifier-user-defined-function?view=sql-server-ver15](https://learn.microsoft.com/en-us/sql/-databases/resource-governor/create-and-test-a-classifier-user-defined-function?view=sql-server-ver15)

Community Discussion

Correct order: 1 The resource pool provides and limits the resources required by the application 2 The workload group uses the resource pool it is associated with 3 The classifier function assign the incoming session to the workload group 4 Modify resource governor to apply configuration changes

looks good, what do you think?

looks good, my G.

looks good, my G.

<https://learn.microsoft.com/en-us/sql/-databases/resource-governor/create-and-test-a-classifier-user-defined-function?view=sql-server-ver16> CREATE RESOURCE POOL CREATE WORKLOAD GROUP Create the classifier function ALTER RESOURCE GOVERNOR RECONFIGURE; GO

Question #84

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 SQL Server 2019 on an Azure virtual machine.

You are troubleshooting performance issues for a query in a SQL Server instance.

To gather more information, you query sys.dm_exec_requests and discover that the wait type is PAGELATCH_UP and the wait_resource is 2:3:905856.

You need to improve system performance.

Solution: You shrink the transaction log file.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

You should instead reduce the use of table variables and temporary tables.

Or you could create additional tempdb files.

Note: The following operations use tempdb extensively:

- * Repetitive create-and-drop operation of temporary tables (local or global).

- * Table variables that use tempdb for storage.

- * Etc.

Reference:

<https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Community Discussion

Selected Answer: B

B is correct, related to tempdb performance, see article from solution

Answer looks correct

B is correct PAGELATCH_UP: An operation is waiting for an update latch on an in-memory page. Update latches are commonly used when there's row versioning activity in tempdb, or when system allocation pages are being updated https://documentation.red-gate.com/sm4/working-with-overviews/using-performance-diagnostics/list-of-common-wait-types/pagelatch_up

Question #85

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 SQL Server 2019 on an Azure virtual machine.

You are troubleshooting performance issues for a query in a SQL Server instance.

To gather more information, you query sys.dm_exec_requests and discover that the wait type is PAGELATCH_UP and the wait_resource is 2:3:905856.

You need to improve system performance.

Solution: You change the data file for the master database to autogrow by 10 percent.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

You should instead reduce the use of table variables and temporary tables.

Or you could create additional tempdb files

Note: The following operations use tempdb extensively:

- * Repetitive create-and-drop operation of temporary tables (local or global).
- * Table variables that use tempdb for storage.
- * Etc.

Reference:

<https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Community Discussion

Given answer is correct.

PAGELATCH_UP is often related to tempDb contention.

repeated question

sorry, no, actually "solution" part changes

sorry, no, actually "solution" part changes

Question #86

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 SQL Server 2019 on an Azure virtual machine.

You are troubleshooting performance issues for a query in a SQL Server instance.

To gather more information, you query sys.dm_exec_requests and discover that the wait type is PAGELATCH_UP and the wait_resource is 2:3:905856.

You need to improve system performance.

Solution: You reduce the use of table variables and temporary tables.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

The following operations use tempdb extensively:

- * Repetitive create-and-drop operation of temporary tables (local or global).
- * Table variables that use tempdb for storage.
- * Etc.

Reference:

<https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Community Discussion

Answer A is correct, other questions in the series have answer B - No. The case is about tempdb problem. <https://docs.microsoft.com/en-us/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

In the series of these questions there is another Solution: "You create additional tempdb files." As per my understanding there could only be one Yes and all No in the series so is this answer Yes or it is Yes for the Solution: "you create additional tempdb files."

Is for TempDb contention, and in this scenario is better reduce use of table variables and temporary tables.

Question #87

You have an Azure SQL database named db1 on a server named server1.

You need to modify the MAXDOP settings for db1.

What should you do?

- A) Connect to db1 and run the sp_configure command.
- B) Connect to the master database of server1 and run the sp_configure command.
- C) Configure the extended properties of db1.

D) Modify the database scoped configuration of db1. (Correct Answer)

Explanation

Correct Answer:

D

If you determine that a MAXDOP setting different from the default is optimal for your Azure SQL Database workload, you can use the ALTER DATABASE SCOPED CONFIGURATION T-SQL statement.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/configure-max-degree-of-parallelism>

Community Discussion

The question is directed for Azure SQL database. Your link is applicable to SQL Server.
Answer is correct.

The question is directed for Azure SQL database. Your link is applicable to SQL Server.
Answer is correct.

Given answer is correct: <https://docs.microsoft.com/en-us/sql/t-sql/statements/alter-database-scoped-configuration-transact-sql?view=sql-server-ver15>

Selected Answer: D

In Azure SQL Database, you can change the default MAXDOP value: At the query level, using the MAXDOP query hint. At the database level, using the MAXDOP database scoped configuration. <https://docs.microsoft.com/en-us/azure/azure-sql/database/configure-max-degree-of-parallelism?view=azuresql>

The answer is D. The answer b it nos possible because sp_configure is a server level, no database level. the syntax for database level it the next -- Syntax for SQL Server, Azure SQL Database and Azure SQL Managed Instance
ALTER DATABASE SCOPED
CONFIGURATION { { [FOR SECONDARY] SET <set_options>} } | CLEAR PROCEDURE_CACHE
[plan_handle] | SET < set_options > [;] < set_options > ::= { MAXDOP = { <value> |
PRIMARY} | LEGACY_CARDINALITY_ESTIMATION = { ON | OFF | PRIMARY}

Question #88

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 SQL Server 2019 on an Azure virtual machine.

You are troubleshooting performance issues for a query in a SQL Server instance.

To gather more information, you query sys.dm_exec_requests and discover that the wait type is PAGELATCH_UP and the wait_resource is 2:3:905856.

You need to improve system performance.

Solution: You create additional tempdb files.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

To improve the concurrency of tempdb, try the following methods:

- * Increase the number of data files in tempdb to maximize disk bandwidth and reduce contention in allocation structures.
- * Etc.

Note: Symptoms -

On a server that is running Microsoft SQL Server, you notice severe blocking when the server is experiencing a heavy load. Dynamic Management Views [sys.dm_exec_request or sys.dm_os_waiting_tasks] indicates that these requests or tasks are waiting for tempdb resources. Additionally, the wait type is PAGELATCH_UP, and the wait resource points to pages in Tempdb.

Reference:

<https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Community Discussion

Yes, adding more tempdb files decrease contention on tempdb. <https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

Yes, adding more tempdb files decrease contention on tempdb. <https://docs.microsoft.com/en-US/troubleshoot/sql/performance/recommendations-reduce-allocation-contention>

its ok?

Question #89

You have SQL Server on an Azure virtual machine.

You need to add a 4-TB volume that meets the following requirements:

- ⇒ Maximizes IOPs
- ⇒ Uses premium solid state drives (SSDs)

What should you do?

A) Attach two mirrored 4-TB SSDs.

B) Attach a stripe set that contains four 1-TB SSDs. (Correct Answer)

C) Attach a RAID-5 array that contains five 1-TB SSDs.

D) Attach a single 4-TB SSD.

Explanation

Correct Answer:

B

For more throughput, you can add additional data disks and use disk striping.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/storage-configuration?tabs=windows2016>

Community Discussion

When you see "Maximizes IOPs" choose Striping, is the better solution.

So the answer on striping seems correct to me.

So the answer on striping seems correct to me.

Answer looks correct

Out of all options, this should provide the best performance: <https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/performance-guidelines-best-practices-storage>

Question #90

You have an Azure SQL database named db1 on a server named server1.

The Intelligent Insights diagnostics log identifies that several tables are missing indexes.

You need to ensure that indexes are created for the tables.

What should you do?

- A) Run the DBCC SQLPERF command.
- B) Run the DBCC DBREINDEX command.

C) Modify the automatic tuning settings for db1. (Correct Answer)

- D) Modify the Query Store settings for db1.

Explanation

Correct Answer:

C

Automatic tuning is a fully managed intelligent performance service that uses built-in intelligence to continuously monitor queries executed on a database, and it automatically improves their performance.

Automatic tuning for Azure SQL Database uses the CREATE INDEX, DROP INDEX, and FORCE LAST GOOD PLAN database advisor recommendations to optimize your database performance.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-overview>

Community Discussion

Automatic tuning is capable of seamlessly tuning hundreds of thousands of databases without affecting performance of the existing workloads. The solution has been globally available since 2016 and proven to enable performant and stable workloads while reducing resource consumption on Azure.

Answer looks correct

<https://learn.microsoft.com/en-us/training/modules/configure-databases-for-optimal-performance/4-describe-automatic-tuning>

Question #91

You have an Azure SQL managed instance named SQL1 and two Azure web apps named App1 and App2.

You need to limit the number of IOPs that App2 queries generate on SQL1.

Which two actions should you perform on SQL1? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Enable query optimizer fixes.
- B) Enable Resource Governor. (Correct Answer)**
- C) Enable parameter sniffing.
- D) Create a workload group. (Correct Answer)**
- E) Configure In-memory OLTP.
- F) Run the Database Engine Tuning Advisor.
- G) Reduce the Max Degree of Parallelism value.

Explanation

Correct Answer:

BD

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 I/O, and memory that incoming application requests can use.

The following concept is fundamental to understanding and using Resource Governor:

* Workload groups. A workload group serves as a container for session requests that have similar classification criteria. A workload allows for aggregate monitoring of the sessions, and defines policies for the sessions. Each workload group is in a resource pool. Two workload groups (internal and default) are created and mapped to their corresponding resource pools when SQL Server is installed. Resource Governor also supports user-defined workload groups.

Reference:

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

Community Discussion

Selected Answer: BD

The given answer is correct.

Answer is B and D from what I understood. From Microsoft docs: Resource Governance To enforce resource limits, Azure SQL Database uses a resource governance implementation that is based on SQL Server Resource Governor, modified and extended to run in the cloud. In SQL Database, multiple resource pools and workload groups, with resource limits set at both pool and group levels, provide a balanced Database-as-a-Service. User workload and internal workloads are classified into separate resource pools and workload groups. User workload on the primary and readable secondary replicas, including geo-replicas, is classified into the SloSharedPool1 resource pool and UserPrimaryGroup.DBId[N] workload groups, where [N] stands for the database ID value. In addition, there are multiple resource pools and workload groups for various internal workloads.

Selected Answer: BD

The given answer is correct.

The answer is correc.

parameter sniffing what relation have to it ?? it means that SP could be run w/o re-compiles

Question #92

You have an Azure SQL database named db1 on a server named server1.

The Intelligent Insights diagnostics log identifies queries that cause performance issues due to tempDB contention.

You need to resolve the performance issues.

What should you do?

A) Implement memory-optimized tables. (Correct Answer)

- B) Run the DBCC FLUSHPROCCINDB command.
- C) Replace the sequential index keys with nonsequential keys.
- D) Run the DBCC DBREINDEX command.

Explanation

Correct Answer:

A

TempDB contention troubleshooting:

The diagnostics log outputs tempDB contention details. You can use the information as the starting point for troubleshooting. There are two things you can pursue to alleviate this kind of contention and increase the throughput of the overall workload: You can stop using the temporary tables. You also can use memory- optimized tables.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/intelligent-insights-troubleshoot-performance#tempdb-contention>

Community Discussion

Selected Answer: A

TempDB contention -> memory-optimized tables or reducing temporary tables or variables.

Selected Answer: A

TempDB contention The diagnostics log outputs tempDB contention details. You can use the information as the starting point for troubleshooting. There are two things you can pursue to alleviate this kind of contention and increase the throughput of the overall workload: You can stop using the temporary tables. You also can use memory-optimized tables.

Question #93

HOTSPOT -

You have an Azure subscription that contains an Azure SQL database.

The database fails to respond to queries in a timely manner.

You need to identify whether the issue relates to resource_semaphore waits.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
SELECT
    is_user_process
    wait_time
    wait_type
        SUM(wait_time) AS total_wait_time_ms
FROM sys.
    dm_exec_query_stats
    dm_exec_requests
    query_store_query
JOIN sys.dm_exec_sessions AS dmv2
    ON dmv1.session_id = dmv2.session_id
WHERE is_user_process = 1
GROUP BY wait_type
ORDER BY SUM(wait_time) DESC;
```

Explanation

Correct Answer:

Answer Area

```
SELECT
    is_user_process
    wait_time
    wait_type
        SUM(wait_time) AS total_wait_time_ms
FROM sys.
    dm_exec_query_stats
    dm_exec_requests
    query_store_query
JOIN sys.dm_exec_sessions AS dmv2
    ON dmv1.session_id = dmv2.session_id
WHERE is_user_process = 1
GROUP BY wait_type
ORDER BY SUM(wait_time) DESC;
```

If your top wait type is RESOURCE_SEMAHPORE and you don't have a high CPU usage issue, you may have a memory grant waiting issue.

Determine if a RESOURCE_SEMAHPORE wait is a top wait

Use the following query to determine if a RESOURCE_SEMAHPORE wait is a top wait

SELECT wait_type,

SUM(wait_time) AS total_wait_time_ms

FROM sys.dm_exec_requests AS req

JOIN sys.dm_exec_sessions AS sess

ON req.session_id = sess.session_id

WHERE is_user_process = 1 -

GROUP BY wait_type -

ORDER BY SUM(wait_time) DESC;

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/monitoring-with-dmvs>

Community Discussion

https://www.sqlshack.com/sql-server-performance-tuning-resource_semaphore-waits/

Answer is correct In addition, sys.query_store_query table does not have column session_id required for the join in the query

Answer is correct

Question #94

You have SQL Server 2019 on an Azure virtual machine that runs Windows Server 2019. The virtual machine has 4 vCPUs and 28 GB of memory.

You scale up the virtual machine to 8 vCPUs and 64 GB of memory.

You need to reduce tempdb contention without negatively affecting server performance.

What is the number of secondary data files that you should configure for tempdb?

- A) 2
- B) 4
- C) 8 (Correct Answer)**
- D) 64

Explanation

Correct Answer:

C

The number of secondary data files depends on the number of (logical) processors on the machine. As a general rule, if the number of logical processors is less than or equal to eight, use the same number of data files as logical processors. If the number of logical processors is greater than eight, use eight data files. Then if contention continues, increase the number of data files by multiples of four until the contention decreases to acceptable levels, or make changes to the workload/code.

Reference:

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

Community Discussion

Selected Answer: B

I think the correct answer is B), because you should have 8 data files for 8vCPU in total, but you already have some data files and you just need to add/configure extra secondary files

There should be one TempDB data file for each thread/core/vCPU on the instance with a maximum of 8.

Selected Answer: C

Answer should be C

The number of secondary data files depends on the number of (logical) processors on the machine. As a general rule, if the number of logical processors is less than or equal to eight, use the same number of data files as logical processors. If the number of logical processors is greater than eight, use eight data files. Then if contention continues, increase the number of data files by multiples of four until the contention decreases to acceptable levels, or make changes to the workload/code. So answer should be C.8

Is the question being asked is total number of tempdb files or additional tempdb files to be configured?

Question #95

You receive numerous alerts from Azure Monitor for an Azure SQL Database instance.

You need to reduce the number of alerts. You must only receive alerts if there is a significant change in usage patterns for an extended period.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Set Threshold Sensitivity to High
- B) Set the Alert logic threshold to Dynamic (Correct Answer)**
- C) Set the Alert logic threshold to Static
- D) Set Threshold Sensitivity to Low (Correct Answer)**
- E) Set Force Plan to On

Explanation

Correct Answer:

BD

B: Dynamic Thresholds continuously learns the data of the metric series and tries to model it using a set of algorithms and methods. It detects patterns in the data such as seasonality (Hourly / Daily / Weekly), and is able to handle noisy metrics (such as machine CPU or memory) as well as metrics with low dispersion (such as availability and error rate).

D: Alert threshold sensitivity is a high-level concept that controls the amount of deviation from metric behavior required to trigger an alert.

Low → The thresholds will be loose with more distance from metric series pattern. An alert rule will only trigger on large deviations, resulting in fewer alerts.

Incorrect Answers:

A: High → The thresholds will be tight and close to the metric series pattern. An alert rule will be triggered on the smallest deviation, resulting in more alerts.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-dynamic-thresholds>

Community Discussion

B and D make the most sense and will generate the least amount of alerts.

If the sensitivity is high that will generate MORE alerts.

If the sensitivity is high that will generate MORE alerts.

If you are using a Static threshold, continue to define a Threshold value. The metric chart can help determine what might be a reasonable threshold. If you are using a Dynamic threshold, continue to define the Threshold sensitivity. The metric chart will display the calculated thresholds based on recent data. <https://docs.microsoft.com/en-us/azure/azure-monitor/alerts-metric>

I would go for A and B since the remaining answers does not make sense to me

Question #96

You have an Azure SQL database named sqldb1.

You need to minimize the amount of space by the data and log files of sqldb1.

What should you run?

A) DBCC SHRINKDATABASE (Correct Answer)

- B) sp_clean_db_free_space
- C) sp_clean_db_file_free_space
- D) DBCC SHRINKFILE

Explanation

Correct Answer:

A

DBCC SHRINKDATABASE shrinks the size of the data and log files in the specified database.

Incorrect Answers:

D: To shrink one data or log file at a time for a specific database, execute the DBCC SHRINKFILE command.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-shrinkdatabase-transact-sql>

Community Discussion

Azure SQL database supports: DBCC SHRINKDATABASE (N'db1');

<https://docs.microsoft.com/en-us/azure/azure-sql/database/file-space-manage>

For an Azure SQL database, it's generally not recommended to use DBCC SHRINKDATABASE (option A) as it can cause performance issues and should only be used as a last resort. Instead, DBCC SHRINKFILE (option D) is the preferred option to minimize the amount of space used by the data and log files of an Azure SQL database.

DBCC SHRINKDATABASE shrinks all data and log files in a database using a single command. The command shrinks one data file at a time, which can take a long time for larger databases. It also shrinks the log file, which is usually unnecessary because Azure SQL Database shrinks log files automatically as needed.

Question #97

You have an Azure SQL Database server named `sqlsrv1` that hosts 10 Azure SQL databases.

The databases perform slower than expected.

You need to identify whether the performance issue relates to the use of `tempdb` by Azure SQL databases in `sqlsrv1`.

What should you do?

- A) Run Query Store-based queries
- B) Review information provided by SQL Server Profiler-based traces
- C) Review information provided by Query Performance Insight
- D) Run dynamic management view-based queries (Correct Answer)**

Explanation

Correct Answer:

D

Microsoft Azure SQL Database and Azure SQL Managed Instance enable a subset of dynamic management views to diagnose performance problems, which might be caused by blocked or long-running queries, resource bottlenecks, poor query plans, and so on. This include identifying `tempdb` performance issues:

When identifying IO performance issues, the top wait types associated with `tempdb` issues is `PAGELATCH_*` (not `PAGEIOLATCH_*`).

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/monitoring-with-dmvs>

Community Discussion

I believe D is right based on <https://docs.microsoft.com/en-us/azure/azure-sql/database/monitoring-with-dmvs#identify-tempdb-performance-issues>

Just checked my Azure Database, "Query Performance Insight" only provides CPU, Data IO, Log IO, Duration, and Execution count information. Answer C is not correct.

Just checked my Azure Database, "Query Performance Insight" only provides CPU, Data IO, Log IO, Duration, and Execution count information. Answer C is not correct.

Just checked my Azure Database, "Query Performance Insight" only provides CPU, Data IO, Log IO, Duration, and Execution count information. Answer C is not correct.

Just checked my Azure Database, "Query Performance Insight" only provides CPU, Data IO, Log IO, Duration, and Execution count information. Answer C is not correct.

Question #98

DRAG DROP -

You are building an Azure virtual machine.

You allocate two 1-TiB, P30 premium storage disks to the virtual machine. Each disk provides 5,000 IOPS.

You plan to migrate an on-premises instance of Microsoft SQL Server to the virtual machine. The instance has a database that contains a 1.2-TiB data file. The database requires 10,000 IOPS.

You need to configure storage for the virtual machine to support the database. Which three objects should you create in sequence? To answer, move the appropriate objects from the list of objects to the answer area and arrange them in the correct order.

Select and Place:

Actions	Answer Area
a virtual disk that uses the stripe layout	
a virtual disk that uses the mirror layout	
a volume	
a virtual disk that uses the simple layout	
a storage pool	

Explanation

Correct Answer:

Actions	Answer Area
a virtual disk that uses the stripe layout	a storage pool
a virtual disk that uses the mirror layout	a virtual disk that uses the stripe layout
a volume	a volume
a virtual disk that uses the simple layout	
a storage pool	

Follow these same steps to create striped virtual disk:

- ⇒ Create Log Storage Pool.
- ⇒ Create Virtual Disk
- ⇒ Create Volume

Box 1: a storage pool -

Box 2: a virtual disk that uses stripe layout

Disk Striping: Use multiple disks and stripe them together to get a combined higher IOPS and Throughput limit. The combined limit per VM should be higher than the combined limits of attached premium disks.

Box 3: a volume -

Reference:

<https://hanu.com/hanu-how-to-striping-of-disks-for-azure-sql-server/>

Community Discussion

Storage Layout options Simple, Mirror Or Parity. Create Virtual Disk with simple layout is correct.

Answer given is correct. You can stripe 2 premium data disk to get 10000 IOPS. <https://techcommunity.microsoft.com/t5/sql-server/optimize-oltp-performance-with-sql-server-on-azure-vm/ba-p/916794>

-> a storage pool -> a virtual disk that uses the simple layout -> a volume There are only three layouts while creating virtual disks on a storage pool: Simple - Data is striped across physical disks, maximizing capacity and throughput Mirror - Data is striped across physical disks, creating two or three copies of data Parity - Data and parity information is striped across physical disks, increasing reliability

This stripe is not about creating redundancy like RAID 5. This is about combining the total IOPS of the two virtual disk into a single volume with 10,000 IOPS. Redundancy is already provided by the Azure infrastructure hosting the virtual disk. It runs at 11 9s.

This stripe is not about creating redundancy like RAID 5. This is about combining the total IOPS of the two virtual disk into a single volume with 10,000 IOPS. Redundancy is already provided by the Azure infrastructure hosting the virtual disk. It runs at 11 9s.

Question #99

You have an Azure subscription that contains an Azure SQL database. The database contains a table named tablet that uses partitioned columnstores.

You need to configure table1 to meet the following requirements:

- Each partition must be compressed.
- The compression ratio must be maximized.
- You must be able to index the compressed data.

What should you use?

- A) page compression
- B) columnstore compression
- C) GZIP compression
- D) columnstore archival compression (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

"For columnstore tables and indexes, all columnstore tables and indexes always use columnstore compression and this is not user configurable. Use columnstore archival compression to further reduce the data size for situations when you can afford extra time and CPU resources to store and retrieve the data." <https://learn.microsoft.com/en-us/sql/relational-databases/data-compression/data-compression?view=sql-server-ver16#:~:text=For%20columnstore%20tables%20and%20indexes%2C%20all,to%20store%20and%20retrieve%20the%20data.>

Both columnstore and columnstore archival compression can be indexed but archival achieves the max compression ratio. There's also no requirement for performance, so the slowness of archival compression is acceptable.

While columnstore archival compression can be used to compress columnstore data in a way that minimizes storage costs, it is not optimized for query performance, as it is designed for long-term storage of cold data. In this scenario, the requirement is to maximize compression ratio while still being able to perform index operations on the compressed data. Columnstore archival compression is not optimized for indexing, and as such, it would not meet this requirement. Therefore, the correct answer is B. columnstore compression.

The questions only asks to achieve max compression. It doesn't ask for any query or index Optimization. So IMHO, it's Archival.

The questions only asks to achieve max compression. It doesn't ask for any query or index Optimization. So IMHO, it's Archival.

Selected Answer: B

Columnstore tables and indexes are always stored with columnstore compression ¹. You can further reduce the size of columnstore data by configuring an additional compression called archival compression. To perform archival compression, SQL Server runs the Microsoft XPRESS compression algorithm on the data ¹. However, it is important to note that archival compression is not an indexing technique. Important (Only when you can afford extra time and CPU) Archival compression is a data compression technique that can be used to further reduce the size of columnstore data for situations when you can afford extra time and CPU resources to store and retrieve the data.

Question #100

You have an Azure subscription linked to an Azure Active Directory (Azure AD) tenant. The subscription contains 10 virtual machines that run Windows Server 2019 and host Microsoft SQL Server 2019 instances.

You need to ensure that you can manage the SQL Server instances by using a single user account.

What should you do first?

A) Enable a user-assigned managed identity on each virtual machine. (Correct Answer)

- B) Deploy an Azure Active Directory Domain Services (Azure AD DS) domain and join the virtual machines to the domain.
- C) Enable a system-assigned managed identity on each virtual machine.
- D) Join the virtual machines to the Azure AD tenant.

Explanation

Correct Answer:

A

Community Discussion

Selected Answer: A

As per below Microsoft URL, I believe answer is A - Enable user Assigned managed Identity..... . Is Azure Active Directory Domain Services (Azure AD DS) supported with SQL Server on Azure VMs? No. Using Azure Active Directory Domain Services (Azure AD DS) isn't currently supported with SQL Server on Azure VMs. Use an Active Directory domain account instead. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/frequently-asked-questions-faq?view=azuresql>

Selected Answer: A

I think Answer A is correct because of this link: <https://learn.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/overview>

B is correct

Selected Answer: A

The same user-assigned managed identity can be associated with more than one Azure resource.

Selected Answer: B

Correct ans. B

Question #101

DRAG DROP

You have an Azure subscription.

You plan to deploy a new Azure virtual machine that will host a Microsoft SQL Server instance.

You need to configure the disks on the virtual machine. The solution must meet the following requirements:

- Minimize latency for transaction logs.
- Minimize the impact on IO throughput of the virtual machine.

Which type of disk should you use for each workload? To answer, drag the appropriate disk types to the correct workloads. Each disk type 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.

NOTE: Each correct selection is worth one point.

Disk Types
Local
Premium SSD
Standard HDD
Standard SSD
Ultra Disk

Answer Area

TempDB:

Transaction logs:

Explanation

Correct Answer:

Answer Area

TempDB: Premium SSD

Transaction logs: Ultra Disk

Community Discussion

According this article: <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/performance-guidelines-best-practices-storage?view=azuresql> "For the log drive ... If submillisecond storage latency is required, use Azure ultra disk" - so the answer is correct "Place tempdb on the local ephemeral SSD (default D:\) drive for most SQL Server workloads" - thus the answer should be perhaps "local" ?

Yes I agree, the tempdb should be on a local drive

correct If possible, use Write Acceleration over ultra disks for the transaction log disk. For VMs that don't support Write Acceleration but require low latency to the transaction log, use Azure ultra disks.

which one is correct option? I think, Tempdb should be local and transaction log should be premium

Tempdb should be local. Not sure about the other one, but I guess if we are minimising latency, it must be Ultra Disk?

Question #102

HOTSPOT

You have an Azure SQL database named DB1 that contains a table named Orders. The Orders table contains a row for each sales order. Each sales order includes the name of the user who placed the order.

You need to implement row-level security (RLS). The solution must ensure that the users can view only their respective sales orders.

What should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Create:

- A materialized view in DB1
- A security policy in the Orders table
- Database scoped credentials in DB1

Control access to the rows by using:

- A masking rule
- A table-valued function
- The CONTAINS predicate

Explanation

Correct Answer:

Create:

- A materialized view in DB1
- A security policy in the Orders table
- Database scoped credentials in DB1

Control access to the rows by using:

- A masking rule
- A table-valued function
- The CONTAINS predicate

Community Discussion

Answer is correct. Row-level security is implemented via CREATE SECURITY POLICY and using in-table function

Answer is correct. Implement RLS by using the CREATE SECURITY POLICY Transact-SQL statement, and predicates created as inline table-valued functions. <https://learn.microsoft.com/en-us/sql/relational-databases/security/row-level-security?view=sql-server-ver16>

Question #103

DRAG DROP

You have an Azure subscription that contains an Azure SQL database named SQLDb1. SQLDb1 contains a table named Table1.

You plan to deploy an Azure web app named webapp1 that will export the rows in Table1 that have changed.

You need to ensure that webapp1 can identify the changes to Table1. The solution must meet the following requirements:

- Minimize compute times.
- Minimize storage.

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

- From webapp1, connect to SQLDb1, obtain the initial dataset and run the CHANGE_TRACKING_CURRENT_VERSION() function.
- Connect to SQLDb1 and run the following Transact-SQL statement
`EXEC sys.sp_cdc_enable_table`
- Connect to SQLDb1 and run the following Transact-SQL statement
`EXEC sys.sp_cdc_enable_db`
- From webapp1, connect to SQLDb1, obtain the initial dataset, and run the CHANGETABLE() function.
- Connect to SQLDb1 and run the following Transact-SQL statement
`ALTER DATABASE SQLDb1 SET CHANGE_TRACKING = ON`
- Connect to SQLDb1 and run the following Transact-SQL statement
`ALTER TABLE dbo.Table1 ENABLE CHANGE_TRACKING`

Answer Area

Explanation

Correct Answer:

Answer Area

Connect to SQLDb1 and run the following Transact-SQL statement
ALTER DATABASE SQLDb1 SET CHANGE_TRACKING = ON

Connect to SQLDb1 and run the following Transact-SQL statement
ALTER TABLE dbo.Table1 ENABLE CHANGE_TRACKING

From webapp1, connect to SQLDb1, obtain the initial dataset, and run the CHANGETABLE() function.

Community Discussion

The answer is correct. To track changes, change tracking must first be enabled for the database and then enabled for the tables that you want to track within that database.
1) ALTER DATABASE Sandbox1 SET CHANGE_TRACKING = ON
2) ALTER TABLE Persons ENABLE CHANGE_TRACKING
3) run the CHANGETABLE() function

did a small lab, got error msg when enabling Change_Tracking on table before enabling on database level. ===Change tracking must be enabled on database 'Sandbox1' before it can be enabled on table 'Persons'=====

did a small lab, got error msg when enabling Change_Tracking on table before enabling on database level. ===Change tracking must be enabled on database 'Sandbox1' before it can be enabled on table 'Persons'=====

did a small lab, got error msg when enabling Change_Tracking on table before enabling on database level. ===Change tracking must be enabled on database 'Sandbox1' before it can be enabled on table 'Persons'=====

did a small lab, got error msg when enabling Change_Tracking on table before enabling on database level. ===Change tracking must be enabled on database 'Sandbox1' before it can be enabled on table 'Persons'=====

Question #104

HOTSPOT

You have an Azure subscription that is linked to an Azure Active Directory (Azure AD) tenant named contoso.com. The subscription contains an Azure SQL database named SQL1 and an Azure web app named app1. App1 has the managed identity feature enabled.

You need to create a new database user for app1.

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

NOTE: Each correct selection is worth one point.

Answer Area

CREATE USER	<input type="button" value="["/> [App1] [Contoso\app1] [App1@contoso.com]	FROM	<input type="button" value="["/> login Windows EXTERNAL PROVIDER
-------------	--	------	---

Explanation

Correct Answer:

CREATE USER	<input type="button" value="["/> [App1] [Contoso\app1] [App1@contoso.com]	FROM	<input type="button" value="["/> login Windows EXTERNAL PROVIDER
-------------	--	------	---

Community Discussion

Answer is correct. In T-SQL, just point to App name not managed identity. <https://learn.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/tutorial-windows-vm-access-sql>

The syntax: CREATE USER [App1] FROM EXTERNAL PROVIDER

The syntax: CREATE USER [App1] FROM EXTERNAL PROVIDER

hussam

Thanks for clarification.

Question #105

DRAG DROP

You have an Azure subscription that contains an Azure SQL database named DB1.

You plan to perform a classification scan of DB1 by using Azure Purview.

You need to ensure that you can register DB1.

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.

SecExams

Actions	Answer Area
From the Purview Studio, create a scan trigger.	
Modify the Access control (IAM) settings for DB1.	
Create a system-assigned managed identity.	
Create a Purview account.	
From the Purview Studio, create a scan rule set.	

() () ()

Explanation

Correct Answer:

Answer Area
Create a Purview account.
Modify the Access control (IAM) settings for DB1.
Create a system-assigned managed identity.

Community Discussion

Create a Purview account. Modify the Access control (IAM) settings for DB1. From the Purview Studio, create a scan rule set.

after some further reading, i think the provided answer seems right. the question is not how to perform scan. it is about what need to be done to register for the scanning. If you

carefully read the content in this link, you will see the answer make more sense. <https://learn.microsoft.com/en-us/azure/purview/register-scan-azure-sql-database?tabs=sql-authentication>

Seem you are right and I was wrong. Only I would change the sequence of the steps 2 and 3. First to create a managed identity => then to modify IAM of the database

system managed identity CANNOT be created by the user, so it's not valid.

system managed identity CANNOT be created by the user, so it's not valid.

Question #106

HOTSPOT

You have an Azure subscription that contains a group named Group1 and an Azure SQL managed instance that hosts a database named DB1.

You need to ensure that Group1 has read access to new tables created in DB1. The solution must use the principle of least privilege.

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

NOTE: Each correct selection is worth one point.

Answer Area

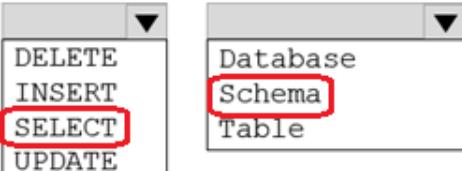
GRANT	<input type="checkbox"/> DELETE	<input type="checkbox"/> INSERT	<input type="checkbox"/> SELECT	<input type="checkbox"/> UPDATE	<input type="checkbox"/> Database	<input type="checkbox"/> Schema	<input type="checkbox"/> Table	:: [table] TO [Contoso\group1]
-------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	-----------------------------------	---------------------------------	--------------------------------	--------------------------------

Explanation

Correct Answer:

Answer Area

GRANT ::[table] TO [Contoso\group1]



Community Discussion

It's an incorrect syntax to use [database]::[table]. The correct answer is [schema]::[table].
<https://learn.microsoft.com/en-us/sql/t-sql/statements/grant-schema-permissions-transact-sql?view=sql-server-ver16>

It's an incorrect syntax to use [database]::[table]. The correct answer is [schema]::[table].
<https://learn.microsoft.com/en-us/sql/t-sql/statements/grant-schema-permissions-transact-sql?view=sql-server-ver16>

The question is confusing. It states "You need to ensure that Group1 has read access to new tables created in DB1. The solution must use the principle of least privilege." If you grant to schema, then it will be specific to schema only. How about if there are two schema in the database like for example dbo and user1? So, it should be GRANT SELECT ON DATABASE::TABLE...

Question #107

You have an instance of SQL Server on Azure Virtual Machines named VM1.

You plan to schedule a SQL Server Agent job that will rebuild indexes of the databases hosted on VM1.

You need to configure the account that will be used by the agent. The solution must use the principle of least privilege.

Which operating system user right should you assign to the account?

- A) Increase scheduling priority
- B) Log on as a service (Correct Answer)**
- C) Profile system performance
- D) Log on as a batch job

Explanation

Correct Answer:

B

Community Discussion

To perform its functions, SQL Server Agent must be configured to use the credentials of an account that is a member of the sysadmin fixed server role in SQL Server. The account must have the following Windows permissions: - Log on as a service (SeServiceLogonRight) <https://learn.microsoft.com/en-us/sql/ssms/agent/configure-sql-server-agent?view=sql-server-ver16>

Selected Answer: D

To configure a SQL Server Agent job on an instance of SQL Server on Azure Virtual Machines (VMs) to rebuild indexes of the databases hosted on the VM, you need to assign the Log on as a batch job user right to the account that will be used by the agent. Therefore, the correct answer is D. Log on as a batch job.

Log on as a service: It determines which service accounts can register a process as a service. Log on as a batch job: When executing scheduled tasks in the context of a different user, SQL Server Agent will first create a new “batch logon session” that runs in the security context of this user. A batch logon session is a session created without any interaction from the user, as opposed to an “interactive” logon session, which is created when a user physically logs on to the machine. This permission enables SQL Server Agent to create a batch logon session. D is the correct answer.

B is correct, because Log On as a Service is a required privilege for sql agent account.
<https://learn.microsoft.com/en-us/sql/ssms/agent/select-an-account-for-the-sql-server-agent-service?view=sql-server-ver16>

For improved security, select This account, which specifies a Windows domain account. The Windows domain account that you specify must have the following permissions: In all Windows versions, permission to log on as a service (SeServiceLogonRight) <https://learn.microsoft.com/en-us/sql/ssms/agent/select-an-account-for-the-sql-server-agent-service?view=sql-server-ver16>

Question #108

You have an Azure subscription that contains an instance of SQL Server on an Azure virtual machine named SQLVM1 and a user named User1. SQLVM1 hosts a database named DB1.

You need to ensure that User1 can create a scheduled task to perform a full backup of DB1. The solution must use the principle of least privilege.

Which built-in database role should you assign to User1?

- A) db_owner
- B) SQLAgentReaderRole
- C) SQLAgentUserRole
- D) SQLAgentOperatorRole (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

As Gocsan said, I tested by using his settings. Yes, SQLAgentUserRole can successfully backup the database from a scheduled job. The answer is C, SQLAgentUserRole.

Selected Answer: C

C, SQLAgentUserRole (least privilege)

Operator for receiving the notifications, the answer is C

C, SQLAgentUserRole I did test this in the SQL server on Azure VM, You have to assign the user the db-Backupoperate role on the target database. SQLAgentUserRole is sufficient to create/schedule a sql agent job

I just did real tests. All of these 3 roles, SQLAgentReaderRole, SQLAgentUserRole, and SQLAgentOperatorRole can NOT create a database backup if the user is NOT in the "db_backupoperator" role on the target DB. Those 3 roles only give the user to create a scheduled job but the user doesn't have the permission to create a DB backup. I got the following error: Executed as user: TESTER. The server principal "TESTER" is not able to access the database "sysdb" under the current security context. [SQLSTATE 08004] (Error 916) BACKUP DATABASE is terminating abnormally. [SQLSTATE 42000] (Error 3013). The step failed. You have to assign the user the db-Backupoperate role on the target database. If the user is in the db_owner role, the user can do the database backup but the user can not set up a scheduled job if it is not in one of those 3 SQLAgent Roles. It is surprise to me. If I am wrong, please let me know. Thanks

Question #109

HOTSPOT

You have an Azure subscription that contains a logical SQL server. The server hosts two databases named db1 and db2 and an Azure AD service principal named app1.

You need to ensure that app1 can access db1. The solution must use the principle of least privilege.

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

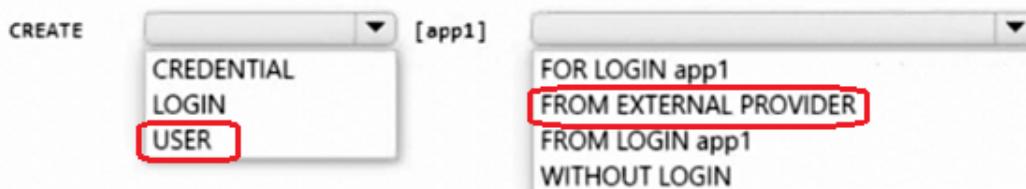
NOTE: Each correct selection is worth one point.

Answer Area

CREATE	[app1]
CREDENTIAL LOGIN USER	FOR LOGIN app1 FROM EXTERNAL PROVIDER FROM LOGIN app1 WITHOUT LOGIN

Explanation

Correct Answer:

Answer Area**Community Discussion**

Actually, rereading the question it says that the logical SQL server hosts the user app1, this means tha app1 has a login on the server. This in turn means that the best way to give app1 permissions to db1 is to create user app1 from login app1

"Create the service principal user in Azure SQL Database - Create the user AppSP in the SQL Database using the following T-SQL command: CREATE USER [AppSP] FROM EXTERNAL PROVIDER GO " Logical server is a default container for Azure SQL Database. <https://learn.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-service-principal-tutorial?view=azuresql>

Answer correct.

Question #110

Your on-premises network contains a server that hosts a 60-TB database named DB1. The network has a 10-Mbps internet connection.

You need to migrate DB1 to Azure. The solution must minimize how long it takes to migrate the database.

What should you use?

- A) Azure Migrate
- B) Azure Data Box (Correct Answer)**
- C) Azure Database Migration Service

D) Data Migration Assistant (DMA)

Explanation

Correct Answer:

B

Community Discussion

Provided answer (B) looks right. Database bigger than 40TB, better to use Azure Data Box

Selected Answer: B

The Microsoft Azure Data Box cloud solution lets you send terabytes of data into and out of Azure in a quick, inexpensive, and reliable way. The secure data transfer is accelerated by shipping you a proprietary Data Box storage device. Each storage device has a maximum usable storage capacity of 80 TB and is transported to your datacenter through a regional carrier. The device has a rugged casing to protect and secure data during the transit.

Selected Answer: B

Yes The only practical solution for a db that size

<https://learn.microsoft.com/en-us/azure/databox/data-box-overview>

<https://learn.microsoft.com/en-us/azure/databox/data-box-overview>

Question #111

HOTSPOT -

You have an Azure SQL logical server.

You run the following script.

```
CREATE DATABASE Sales
GO
CREATE TABLE [dbo].[Orders]
(
    [OrderID] INT NOT NULL,
    [OrderDescription] NVARCHAR (MAX) NOT NULL,
    [Timestamp] Datetime2 NOT NULL
)
WITH (
    SYSTEM_VERSIONING = ON,
    LEDGER = ON
);
GO
```

For each of the following statements, select Yes if the statement is true.

Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
The orders table will allow only rows to be inserted.	<input type="radio"/>	<input type="radio"/>
To create additional tables in the Sales database, the LEDGER = ON parameter must be used.	<input type="radio"/>	<input type="radio"/>
To ensure that a timestamp is added to each row in the orders table, the GENERATED ALWAYS column must be added to the script.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements

The `orders` table will allow only rows to be inserted.

Yes

No

To create additional tables in the Sales database, the `LEDGER = ON` parameter must be used.

To ensure that a timestamp is added to each row in the `orders` table, the `GENERATED ALWAYS` column must be added to the script.

Community Discussion

I think it's NO - as we are creating so called updatable ledger table (i.e. not append-only), we can also delete and update rows. NO - the CREATE DATABASE statement does not contain "WITH LEDGER = ON" clause thus it can contain non-ledger tables NO - when the GENERATED ALWAYS columns are not specified in the CREATE statement they'll be created automatically

I think answer is NNN:If any of the required generated always columns isn't defined in the CREATE TABLE statement and the statement includes LEDGER = ON, the system will automatically attempt to add the column... <https://learn.microsoft.com/en-us/sql/t-sql/statements/create-table-transact-sql?view=sql-server-ver16#generate-always-columns>

Answer is :NNN

answer not readable, please fix

Answer is : NO NO Yes

Question #112

HOTSPOT

You need to use an Azure Resource Manager (ARM) template to deploy an Azure virtual machine that will host a Microsoft SQL Server instance. The solution must maximize disk I/O performance for the SQL Server database and log files.

How should you complete the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

```
"variables": ( ... )  
  "dataDisks": {  
    "caching":     
    ...  
  }  
  "resources": [  
    ...  
    { "type": "Microsoft.Compute/virtualMachines",  
      "properties": {  
        "storageProfile": {  
          "osDisk": {  
            ...  
            },  
            "copy": [  
              {"name": "dataDisks", "count": "[add(variables('dataDiskCount'), variables('logDiskCount'))]",  
               "input": {"lun": "[copyIndex('dataDisks')]", "createOption": "empty",  
                        "caching": "[if(greaterOrEqual(copyIndex('dataDisks'), parameters('dataDiskCount')),  
                                variables('dataDisks').caching )]", "diskSizeGB": 1023,  
                        ...  
                      }  
            ]  
          }  
        }  
      }  
    }  
  ]
```

Explanation

Correct Answer:



Community Discussion

I think it should be opposite, i.e. Read-Only and None. See <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/performance-guidelines-best-practices-storage?view=azuresql#caching> We need to set 'Read-Only' caching for data disks and 'None' for the log disk. There is a loop (copy) in the ARM template, it evaluates whether current disk ID is greater than sum of data disks. If yes then it's the log disk, so assign None, otherwise the value in the variable (i.e. Read-Only). Similar example is here: <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/create-sql-vm-resource-manager-template>

licna is correct

licna is correct

None ReadOnly

"caching": "[if(greaterOrEqual(range(0, add(parameters('sqlDataDisksCount'), parameters('sqlLogDisksCount')))[range(0, length(range(0, add(parameters('sqlDataDisksCount'), parameters('sqlLogDisksCount'))))), [copyIndex('dataDisks')]], parameters('sqlDataDisksCount')), 'None', variables('dataDisk').caching)]", The expression is checking if the current disk being processed (indicated by copyIndex('dataDisks')) is a log disk or a data disk. Here's how it

works: Generate a Range: range(0, add(parameters('sqlDataDisksCount'), parameters('sqlLogDisksCount'))) creates an array from 0 to the total number of disks (data + log disks). Get Current Disk Index: range(0, length(range(0, add(parameters('sqlDataDisksCount'), parameters('sqlLogDisksCount'))))) [copyIndex('dataDisks')] retrieves the current disk index in the loop. Check Disk Type: greaterOrEquals(..., parameters('sqlDataDisksCount')) checks if the current disk index is greater than or equal to the number of data disks. If true, it means the current disk is a log disk. Set Caching Mode: If the current disk is a log disk, set caching to None. If the current disk is a data disk, use the caching setting from variables('dataDisks').caching. So variable at the top of image should be READ-ONLY and the missing bit from the statement is NONE

Question #113

You have an Azure SQL managed instance named MI1.

You need to implement automatic tuning for the databases of MI1.

What should you do?

- A) Use The REST API to call the patch operation and modify the AutomaticTuningServerMode property.
- B) From the Azure portal, configure automatic tuning.

C) Use Transact-SQL to enable the FORCE_LAST_GOOD_PLAN option. (Correct Answer)

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: C

<https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable?view=azuresql> - read first highlighted area

Selected Answer: C

For Azure SQL Managed Instance, the supported option FORCE_LAST_GOOD_PLAN can only be configured through T-SQL. The Azure portal based configuration and automatic index tuning options described in this article do not apply to Azure SQL Managed Instance. Ref: <https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable?view=azuresql>

Selected Answer: B

You can enable auto tuning by Azure Portal and T-SQL. To enable automatic tuning on a single database via T-SQL, connect to the database and execute the following query:
ALTER DATABASE current SET AUTOMATIC_TUNING = AUTO | INHERIT | CUSTOM So, option C is wrong. Answer is B: Azure Portal configuration auto tuning. Ref: <https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable?view=azuresql#t-sql>

Selected Answer: C

C is the correct answer, force_last_good_plan for SQL managed instance. For Azure SQL Managed Instance, the supported option FORCE_LAST_GOOD_PLAN can only be configured through T-SQL. The Azure portal based configuration and automatic index tuning options described in this article do not apply to Azure SQL Managed Instance. <https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable?view=azuresql#enable-automatic-tuning-on-an-individual-database>

Correct the answer to C For Azure SQL Managed Instance, the supported option FORCE_LAST_GOOD_PLAN can only be configured through T-SQL. The Azure portal based configuration and automatic index tuning options described in this article do not apply to Azure SQL Managed Instance. Ref: <https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable?view=azuresql>

Question #114

You have an Azure subscription that contains an Azure SQL database named db1.

You need to implement SQL insights for db1.

Which two resources should you create first? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) a storage account
- B) a virtual machine (Correct Answer)**
- C) an Azure logic app
- D) an Azure function
- E) a Log Analytics workspace (Correct Answer)**

Explanation

Correct Answer:

BE

Community Discussion

correct, a VM and a Log Analytics Workspace: <https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-insights-enable?view=azuresql>

Selected Answer: AE

A. a storage account E. a Log Analytics workspace Azure SQL insights is a feature of Azure Monitor that collects, aggregates, and serves SQL performance metrics. It uses a Log Analytics workspace to store and provide advanced analytics on the performance data. You also need a storage account to maintain the SQL assessment data over time. These two resources are essential for setting up SQL insights. A virtual machine, an Azure logic app, and an Azure function are not necessary for this particular task.

ChatGPT answer - A. Storage Account B. Log Analytics Workspace

*E. Log Analytics Workspace

*E. Log Analytics Workspace

Question #115

You have an Azure subscription that contains the resources shown in the following table.

Name	Type
App1	Azure web app
db1	Azure SQL database in the serverless tier

App1 experiences transient connection errors and timeouts when it attempts to access db1 after extended periods of inactivity.

You need to modify db1 to resolve the issues experienced by App1 as soon as possible, without considering immediate costs.

What should you do?

- A) Enable automatic tuning for db1.
- B) Increase the number of vCores allocated to db1.
- C) Decrease the auto-pause delay for db1.
- D) Disable auto-pause delay for db1. (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

Selected answer is correct

Selected Answer: D

Answer is correct.

<https://learn.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview?view=azuresql#auto-pausing-and-auto-resuming>

<https://learn.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview?view=azuresql#auto-pausing-and-auto-resuming>

Selected Answer: D

yes disabling auto pause option on databases fixes the issue

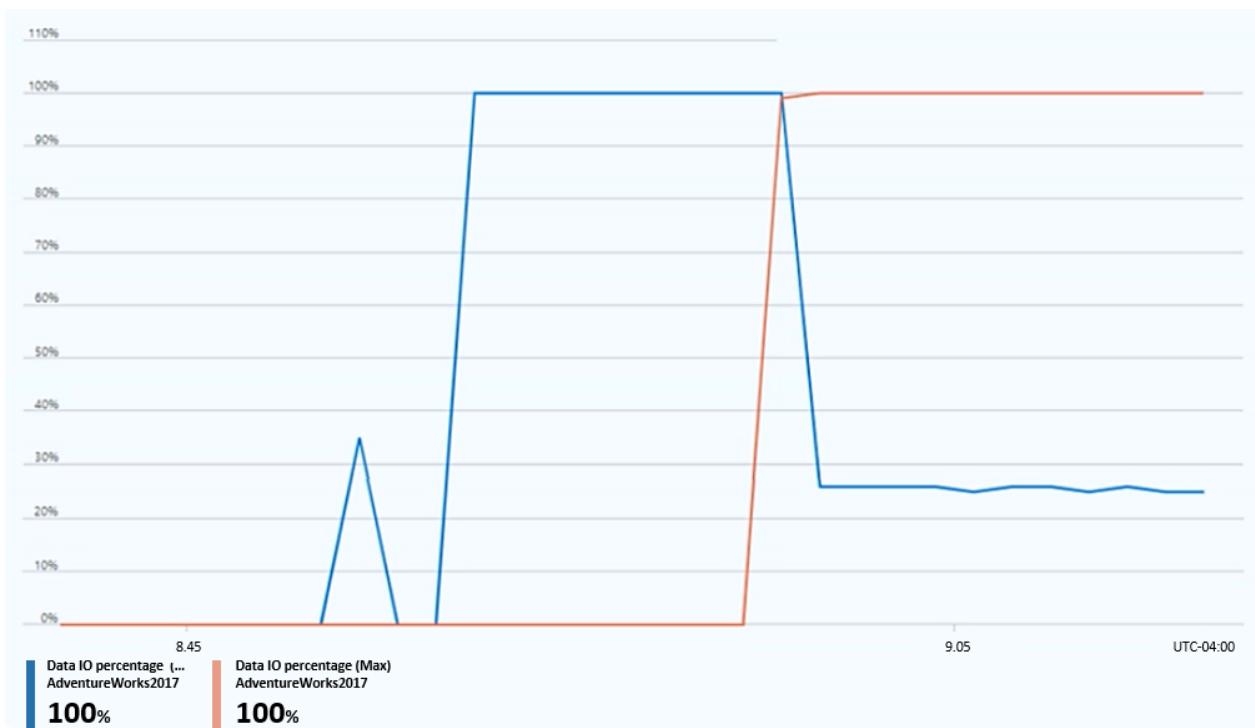
Question #116

HOTSPOT

You have an Azure SQL database named DB1 that contains a table named Table1.

You run a query to load data into Table1.

The performance metrics of Table1 during the load operation are shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

To reduce how long it takes to complete the query you must [answer choice].

- scale the resource
- use an elastic resource
- perform query tuning

To reduce the log IO load of the operation, the query must be updated to use [answer choice] table.

- a temporary
- an In-Memory OTLP durable
- an In-Memory OTLP non durable

Explanation

Correct Answer:

Answer Area

To reduce how long it takes to complete the query you must [answer choice].

- scale the resource
- use an elastic resource
- perform query tuning

To reduce the log IO load of the operation, the query must be updated to use [answer choice] table.

- a temporary
- an In-Memory OTLP durable
- an In-Memory OTLP non durable

Community Discussion

You are loading data into Table1, which means there is some inserts going on. Note that insert statements is also considered a query. Not sure why the first answer is perform query tuning. It should be scale resource in order to reduce the time insert data into Table1.

I was thinking the same, In my opinion also can be scale resources for the first one.

I was thinking the same, In my opinion also can be scale resources for the first one.

Query tuning is correct, make sure insert is efficient i.e. load in batches from In-Memory non durable table is faster.

correct.

Question #117

DRAG DROP

You have a database named db1.

The log for db1 contains the following entry.

```
Date 10/5/2021 10:57:08 AM
Log SQL Server (Current - 10/5/2021 11:26:00 AM)

Sources spid1595

Message
The transaction log for database 'db1' is full due to 'AVAILABILITY_REPLICA'
```

You need to ensure that db1 can process transactions.

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

Back up the transaction log file.

Remove db1 from the availability group.

Shrink the transaction log file.

Shrink db1.

Add db1 back to the availability group.

Answer Area

1

2

3



Explanation

Correct Answer:

Answer Area

- 1 Remove db1 from the availability group.
- 2 Shrink the transaction log file.
- 3 Add db1 back to the availability group.

Community Discussion

my take would be: 1.remove db1 from ag, 2. backup t.log , 3 re-add db1 to ag . shrinking log shouldn't be necessary since log backup will reduce its size

Back up the transaction log file. Remove db1 from the availability group. Shrink the transaction log file.

Based on amazonalex with <https://www.sqlshack.com/sql-server-transaction-log-backup-truncate-and-shrink-operations/>, my answer is Remove db1 from the Availability Group Backup the Transaction Log File Add db1 from the Availability Group

First need to remove DB from AG then sometime its log file auto clean from full to 90% space then shrink log file and readd into AG

First need to remove DB from AG then sometime its log file auto clean from full to 90% space then shrink log file and readd into AG

Question #118

You have the following resources:

- 15 SQL Server on Azure Virtual Machines instances
- 20 Azure SQL databases

You need to recommend a solution to centrally monitor the resources for security vulnerabilities.

What should you include in the recommendation?

- A) database audits
- B) Microsoft Defender
- C) SQL insights (Correct Answer)**
- D) Azure SQL Auditing

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: B

In my opinion it's MS Defender. Keyword is the "vulnerabilities" <https://learn.microsoft.com/en-us/azure/defender-for-cloud/defender-for-sql-introduction>

I agree Microsoft Defender is the correct answer to the question asked. Auditing and SQL insights primary functions are not to detect vulnerabilities. Defender will monitor both IaaS and PaaS resources.

I agree Microsoft Defender is the correct answer to the question asked. Auditing and SQL insights primary functions are not to detect vulnerabilities. Defender will monitor both IaaS and PaaS resources.

Selected Answer: B

Azure Defender monitors for vulnerabilities

Agree.

Question #119

HOTSPOT

You have an Azure subscription that contains an instance of SQL Server on Azure Virtual Machines named SQLVM1 and a user named User1. SQLVM1 hosts a database named DB1.

You need to ensure that User1 can perform the following tasks on DB1:

- Create jobs.
- View all jobs.
- Modify, delete, and disable the jobs the user created.

The solution must use the principle of least privilege.

Which built-in database role should you assign to User1, and where is the role defined? To answer, select the appropriate options in the answer area.

Answer Area

Location:

DB1

master

msdb

Built-in role:

SQLAgentOperatorRole

SQLAgentReaderRole

SQLAgentUserRole

Explanation

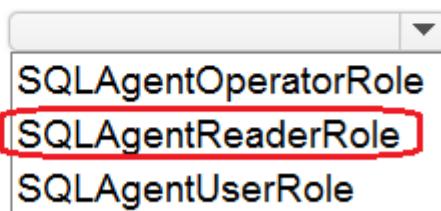
Correct Answer:

Answer Area

Location:



Built-in role:



Community Discussion

Location: msdb Role: SQLAgentUesrRole

Location: msdb Role: SQLAgentOperatorRole • Create jobs. • View all jobs. • Modify, delete, and disable the jobs the user created.

Based on the table here <https://www.youtube.com/watch?v=rodn5MSeiuY> at 0m:40s and using the principle of least privilege, the answer should be SQLAgentReaderRole. SQLAgentUserRole cannot view all jobs, it can only view own jobs. Although both SQLAgentReaderRole and SQLAgentOperatorRole can create/modify/delete own jobs, the next thing to consider here is that the user must be able to disable its own job. SQLAgentReaderRole can disable own job, where SQLAgentOperatorRole can disable all jobs. Using the principle of least privilege, the answer is SQLAgentReaderRole.

The answer is correct. SQLAgentUesrRole can not view all jobs. Gosan is right!

Localtion:msdb Role:SQLAgentReaderRole (Because question request "view all jobs". SQLAgentUserRole only view owned jobs)

Question #120

You have an Azure subscription that contains an Azure SQL managed instance named SQLMI1 and a Log Analytics workspace named Workspace1.

You need to collect performance metrics for SQLMI1 and stream the metrics to Workspace1.

What should you do first?

- A) Create a private endpoint connection on SQLMI1.
- B) Configure Azure SQL Analytics to use Workspace1.
- C) Modify the Compute + storage settings for SQLMI1.

D) Modify the diagnostic settings for SQLMI1. (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

D. Modify the diagnostic settings for SQLMI1.

D. Modify the diagnostic settings for SQLMI1.

Answer is correct.

Selected Answer: D

D is correct, to Modify the diagnostic settings for SQLMI1. Diagnostic settings available for databases in your Azure SQL Managed Instance include: log: SQL Insights, Query Store Runtime Statistics, Query Store Wait Statistics, and Errors destination details: Send to Log Analytics workspace, Archive to a storage account, Stream to an event hub, Send to partner solution <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/monitoring-sql-managed-instance-azure-monitor?view=azuresql#collection-and-routing>

Selected Answer: D

Modify the diagnostic settings for SQLMI1

Question #121

You have an Azure SQL Database elastic pool that contains 10 databases.

You receive the following alert.

Msg 1132, Level 16, state 1, Line 1

The elastic pool has reached its storage limit. The storage used for the elastic pool cannot exceed (76800) MBs.

You need to resolve the alert. The solution must minimize administrative effort.

Which three actions can you perform? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A) Increase the maximum storage of the elastic pool. (Correct Answer)

B) Delete data from a database.

C) Remove a database from the pool. (Correct Answer)

D) Enable data compression.

E) Shrink individual databases. (Correct Answer)

Explanation

Correct Answer:

ACE

Community Discussion

Selected Answer: ADE

I agree with chandlermonica833

To resolve the storage limit alert for your Azure SQL Database elastic pool, you can: A. Increase the maximum storage limit of the elastic pool through Azure's management tools, which is a quick fix requiring minimal administrative effort. D. Enable data compression to reduce the storage size of tables and indexes, which can provide space savings without data loss. E. Shrink individual databases to release unused space back to the pool, although this should be done carefully to avoid performance issues due to fragmentation. Options B and C are less desirable as they involve deleting data or databases, which requires more effort and could impact your applications. Always consider the long-term implications and monitor storage after making changes to prevent future issues.

Selected Answer: ACE

A,C,E are the only options that will resolve the issue with elastic DB pools.

Isn't taking a DB out of the pool the same fix as deleting data?

<https://stackoverflow.com/questions/52496146/azure-sql-server-error-the-elastic-pool-has-reached-its-storage-limit-the-sto> <https://learn.microsoft.com/en-us/azure/azure-sql/database/file-space-manage?view=azuresql-db> increase resource size shrink database move a database to another tier

Question #122

You have an Azure subscription.

You need to deploy a new Azure SQL database by using Azure Command-Line Interface (CLI).

Which three parameters are required?

- A) --name, --edition, and --capacity
- B) --name, --tier, and --min-capacity
- C) --name, --resource-group, and --server (Correct Answer)**
- D) --name, --licence-type, and --capacity

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: C

correct answer... very less discussion on DP 300 ... so i had to comment lol

Selected Answer: C

resource group is needed so it is correct

C. - Correct answer

Answer is correct. When deploying the resource, obviously it needs a name. You must also define where to deploy it (resource group). And you also need to define the "type" of SQL resource (--server)

Question #123

HOTSPOT

You have an Azure subscription.

You plan to migrate 10 on-premises Microsoft SQL Server instances to Azure.

You need to ensure that the migrated environment can be managed by using multiserver administration and supports master/target (MSX/TSX) jobs.

The solution must minimize administrative effort.

Which SQL deployment options should you select as the master server (MSX) and the target server (TSX)? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

MSX:

	▼
SQL database	
SQL managed instances	
SQL virtual machines	

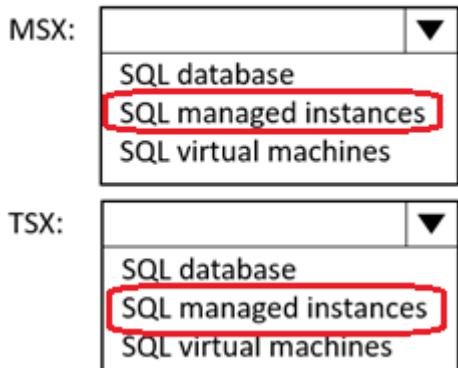
TSX:

	▼
SQL database	
SQL managed instances	
SQL virtual machines	

Explanation

Correct Answer:

Answer Area



Community Discussion

I will say "Virtual Machines" for both, as said here <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/transact-sql-tsql-differences-sql-server?view=azuresql-mi#sql-server-agent> : "The Multi Server Administration feature for master/target (MSX/TSX) jobs are not supported." So, which answer for the test ? :)

But what I see is "The Multi Server Administration feature is not supported on Azure SQL Managed Instance."

But what I see is "The Multi Server Administration feature is not supported on Azure SQL Managed Instance."

On Azure SQL Managed Instance, The Multi Server Administration feature for master/target (MSX/TSX) jobs are not supported. as per info from below Microsoft URL. SO, I think answer is Azure Virtual machines for MSX and TSX setup. <https://learn.microsoft.com/en-us/sql/ssms/agent/create-a-multiserver-environment?view=sql-server-ver16> <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/transact-sql-tsql-differences-sql-server?view=azuresql>

The Master Server (MSX) and Target Server (TSX) are SQL Server concepts used for managing multiple servers at once. The Master Server (MSX) is the central server that manages one or more Target Servers (TSX). By using MSX, you can manage multiple SQL Server instances as if they were a single entity. MSX simplifies the administration tasks of

managing multiple servers by allowing you to execute tasks on multiple servers at once, such as backing up databases or running queries. The Target Server (TSX) is a SQL Server instance that is managed by the Master Server (MSX). TSX instances can be located on the same physical server as the MSX instance or on a different server. MSX/TSX can also be used for managing SQL Server Agent jobs, where you can define jobs at the master server and then distribute them to the target servers. This feature helps in centrally managing and scheduling SQL Server Agent jobs across multiple servers.

Question #124

You have two on-premises Microsoft SQL Server 2019 instances named SQL1 and SQL2.

You need to migrate the databases hosted on SQL1 to Azure. The solution must meet the following requirements:

- The service that hosts the migrated databases must be able to communicate with SQL2 by using linked server connections.
- Administrative effort must be minimized.

What should you use to host the databases?

- A) a single Azure SQL database
- B) SQL Server on Azure Virtual Machines
- C) Azure SQL Managed Instance (Correct Answer)**
- D) an Azure SQL Database elastic pool

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: C

C is correct, Azure SQL Managed Instance. Linked servers are available in SQL Server Database Engine and Azure SQL Managed Instance. They are not enabled in Azure SQL

Database singleton and elastic pools. <https://learn.microsoft.com/en-us/sql/relational-databases/linked-servers/linked-servers-database-engine?view=sql-server-2017>

i think C is correct because Administrative effort must be minimized.

Selected Answer: C

1. Linked servers are NOT available in Azure SQL Database. 2. Also Less Administration.

Question #125

HOTSPOT

You have an on-premises Microsoft SQL Server 2016 instance that hosts a database named db1. You have an Azure subscription that contains an Azure SQL managed instance named MI1.

You plan to perform an online migration of db1 to MI1 by using Azure Database Migration Service.

You need to create the backups for the migration. The solution must minimize the number of backup files created.

Which type of backups should you create, and how should you store the backups? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Backup type:

	▼
Full only	
Full and differential	
Full and transaction log	
Transaction log only	

To store the backups:

	▼
Append all the backups to a single file.	
Append each backup to a separate file.	
Write each backup to a separate file.	

Explanation

Correct Answer:

Answer Area

Backup type:

Full only	▼
Full and differential	
Full and transaction log	
Transaction log only	

To store the backups:

Append all the backups to a single file.	▼
Append each backup to a separate file.	
Write each backup to a separate file.	

Community Discussion

The given answer is correct as Azure Database Migration Service cannot use backups appended to a single file. Reference: <https://www.secexams.com/exams/microsoft/dp-300/view/10/>

Correct reference link: <https://learn.microsoft.com/en-us/azure/dms/known-issues-azure-sql-db-managed-instance-online>

Correct reference link: <https://learn.microsoft.com/en-us/azure/dms/known-issues-azure-sql-db-managed-instance-online>

Question #126

You have a SQL Server on Azure Virtual Machines instance named SQLVM1 that was deployed by using an Azure Marketplace SQL Server 2019 Enterprise image.

You need to change the Microsoft SQL Server instance on SQLVM1 to the Standard edition. The solution must ensure licensing compliance.

What should you do first?

- A) From the SQL Server Installation Center on SQLVM1, run the Edition Upgrade wizard.
- B) From SQLVM1, uninstall the SQL Server instance. (Correct Answer)**
- C) From the SQL Server Installation Center on SQLVM1, run the Repair wizard.
- D) From the Azure portal, reconfigure SQLVM1.

Explanation

Correct Answer:

B

Community Discussion

The answer looks right. No, you cannot use the Edition Upgrade wizard to change from the Enterprise edition to the Standard edition of SQL Server. The Edition Upgrade wizard is used to upgrade to a higher edition of SQL Server, not to downgrade to a lower edition. In this case, since you want to change from the Enterprise edition (a higher edition) to the Standard edition (a lower edition), you need to uninstall the Enterprise edition of SQL Server from the virtual machine and then install the Standard edition.

B is correct <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/change-sql-server-edition?view=azuresql&tabs=azure-portal>

Question #127

Your on-premises network contains a Microsoft SQL Server 2016 server that hosts a database named db1.

You have an Azure subscription.

You plan to migrate db1 to an Azure SQL managed instance.

You need to create the SQL managed instance. The solution must minimize the disk latency of the instance.

Which service tier should you use?

A) Business Critical (Correct Answer)

- B) Hyperscale
- C) General Purpose
- D) Premium

Explanation

Correct Answer:

A

Community Discussion

Selected Answer: A

General purpose has disk latency, Business critical puts the logs on SSD, Premium is a DTU offering which is not supported on Azure SQL MI, Hyperscale is not on Managed Instance

ChatGPT confirms correct answer is A.

Question #128

You have an Azure subscription.

You need to deploy an Azure SQL database. The solution must meet the following requirements:

- Dynamically scale CPU resources.
- Ensure that the database can be paused to reduce costs.

What should you use?

- A) the Business Critical service tier
B) the serverless compute tier (Correct Answer)
C) an elastic pool
D) the General Purpose service tier

Explanation

Correct Answer:

B

Community Discussion

Selected Answer: B

B is correct, Serverless is a compute tier for single databases in Azure SQL Database that automatically scales compute based on workload demand and bills for the amount of compute used per second. The serverless compute tier also automatically pauses databases during inactive periods when only storage is billed and automatically resumes databases when activity returns. The serverless compute tier is available in the General Purpose service tier and currently in preview in the Hyperscale service tier. above statements from below link <https://learn.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview?view=azuresql&tabs=general-purpose>

For the requirements you've outlined, you should use: B. the serverless compute tier
Here's how it aligns with your requirements: Dynamically scale CPU resources: The serverless tier automatically scales compute resources based on workload demand, and you only pay for the compute resources you use. Ensure that the database can be

paused to reduce costs: One of the key features of the serverless tier is the ability to automatically pause the database during inactive periods to save costs, and then automatically resume when activity picks up again.

Question #129

HOTSPOT

You have an Azure subscription.

You need to deploy an Azure SQL managed instance that meets the following requirements:

- Optimize latency.
- Maximize the memory-to-vCore ratio.

Which service tier and hardware generation should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Service tier:

	▼
Business Critical	
General Purpose	
Hyperscale	

Hardware generation:

	▼
Premium-series	
Standard-series (Gen 5)	
Premium-series - memory optimized	

Explanation

Correct Answer:

Answer Area

Service tier:

Business Critical	▼
General Purpose	
Hyperscale	

Hardware generation:

Premium-series	▼
Standard-series (Gen 5)	
Premium-series - memory optimized	

Community Discussion

the Answer given is correct Business Critical service tier on Premium Series Memory-Optimized The Business Critical service tier is built for applications with high I/O requirements. It offers the highest resilience to failures using several isolated replicas.
<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/sql-managed-instance-paas-overview?view=azuresql#business-critical-service-tier>

Given Answer is correct Business critical optimises latency

Service tier: Business Critical Hardware generation: Premium-series - memory optimized
Here's why these selections meet the requirements: Business Critical tier: This service tier is optimized for latency-sensitive workloads and provides the lowest latency due to its use of local SSD storage. It also offers a higher memory-to-vCore ratio compared to other tiers. Premium-series - memory optimized: This hardware generation provides the most memory per vCore, which maximizes the memory-to-vCore ratio. This is suitable for high-performance database workloads that require more memory for in-memory operations.

Question #130

You have an Azure SQL database named DB1.

You need to encrypt DB1. The solution must meet the following requirements:

- Encrypt data in motion.
- Support comparison operators.
- Provide randomized encryption.

What should you include in the solution?

A) Always Encrypted with secure enclaves (Correct Answer)

- B) Always Encrypted
C) column-level encryption
D) Transparent Data Encryption (TDE)

Explanation

Correct Answer:

A

Community Discussion

Selected Answer: A

Always Encrypted with secure enclaves addresses these limitations by allowing some computations on plaintext data inside a secure enclave on the server side. A secure enclave is a protected region of memory within the Database Engine process. The secure enclave appears as an opaque box to the rest of the Database Engine and other processes on the hosting machine. There's no way to view any data or code inside the enclave from the outside, even with a debugger. These properties make the secure enclave a trusted execution environment that can safely access cryptographic keys and sensitive data in plaintext, without compromising data confidentiality.

Selected Answer: A

Always Encrypted supports deterministic only for operator comparisons. AE with secure enclaves addresses this limitation. <https://learn.microsoft.com/en-us/sql/relational-databases/security/encryption/always-encrypted-enclaves?view=sql-server-ver16>

The correct answer is A. Always Encrypted with secure enclaves. Transparent Data Encryption (TDE) is a feature that encrypts data at rest, specifically the physical files that store the data. It does not encrypt data in motion or provide randomized encryption. TDE also does not support comparison operators on encrypted data. Therefore, it does not meet all the requirements stated in your question.

Question #131

You have an instance of SQL Server on Azure Virtual Machines.

You need to ensure that a user named User1 can configure proxy accounts for SQL Server Agent jobs. The solution must use the principle of least privilege.

Which role should you assign to User1?

A) sysadmin (Correct Answer)

- B) SQLAgentUserRole
- C) SQLAgentReaderRole
- D) SQLAgentOperatorRole

Explanation

Correct Answer:

A

Community Discussion

The answer is correct. Only members of the sysadmin fixed server role have permission to create, modify, or delete proxy accounts. Users who are not members of the sysadmin fixed server role must be added to one of the following SQL Server Agent fixed database roles in the msdb database to use proxies: SQLAgentUserRole, SQLAgentReaderRole, or SQLAgentOperatorRole. <https://learn.microsoft.com/en-us/sql/ssms/agent/create-a-sql-server-agent-proxy?view=sql-server-ver16#Permissions>

Answer is incorrect as sysadmin is not least privilege. <https://learn.microsoft.com/en-us/sql/ssms/agent/sql-server-agent-fixed-database-roles?view=sql-server-ver16> SQL Server has the following msdb database fixed database roles, which give administrators finer control over access to SQL Server Agent. The roles listed from least to most privileged access are: SQLAgentUserRole SQLAgentReaderRole SQLAgentOperatorRole

Selected Answer: A

The answer is correct. option A

The answer D is correct.

<https://learn.microsoft.com/en-us/sql/ssms/agent/sql-server-agent-fixed-database-roles?view=sql-server-ver16> - not of the agent roles can create proxies, so sysadmin is my vote as well.

Question #132

You have an Azure SQL database named DB1. DB1 has a table named Table1 that contains the following columns.

Name	Type
Column1	Ntext
Column2	Geometry
Column3	Image
Column4	Varchar
Column5	Datetime2

You plan to enable Always Encrypted for Table1.

Which two columns support encryption? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A) Column1 (Correct Answer)

B) Column2

C) Column3

D) Column4 (Correct Answer)

E) Column5

Explanation

Correct Answer:

AD

Community Discussion

Selected Answer: DE

Always Encrypted isn't supported for the columns using one of the following data types: xml, timestamp, rowversion, image, ntext, text, sql_variant, hierarchyid, geography, geometry, alias, user-defined types.

Selected Answer: DE

Only D and E are supported on Always Encrypted

Selected Answer: DE

Always encrypted is not supported for ntext data type

Selected Answer: DE

D&E Always Encrypted isn't supported for ntext

Selected Answer: DE

Correct answer is D and E.

Question #133

HOTSPOT

-

You have an Azure subscription that contains an Azure SQL managed instance named SQL1.

You use the Microsoft Power BI service.

You need to configure connectivity from the Power BI service to SQL1. The solution must ensure that only the Power BI service can initiate connections to SQL1.

Which type of endpoint should you use for SQL1, and what should you use to control the connections to SQL1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Endpoint type:

	▼
Private	
Public	
Service	

Control connections by using:

	▼
A database-level firewall	
A network security group (NSG)	
A server-level firewall	
Virtual network firewall rules	

Explanation

Correct Answer:

Answer Area

Endpoint type:

▼
Private
Public
Service

Control connections by using:

▼
A database-level firewall
A network security group (NSG)
A server-level firewall
Virtual network firewall rules

Community Discussion

To configure connectivity from the Power BI service to an Azure SQL managed instance, you should use a Public endpoint for SQL1 1. You can control the connections to SQL1 by using a Network Security Group (NSG) 1. Therefore, the correct answer is Endpoint type: Public and Control connections by using: A network security group (NSG).

The answer is correct

reference: <https://learn.microsoft.com/en-us/power-bi/enterprise/service-premium-service-tags?source=recommendations> The following configurations are necessary to successfully enable the endpoints for use in the Power BI service: 1. Enable a public endpoint in the SQL Managed Instance. 2. Create a Network Security Group rule to allow inbound traffic. 3. Enter the credentials in Power BI. So the answer is correct.

<https://www.datahai.co.uk/power-bi/connecting-power-bi-to-azure-sql-database-using-private-endpoints/> <https://community.fabric.microsoft.com/t5/Power-Query/Azure-SQL-Server-Managed-Instance/m-p/377418#M16216> <https://community.powerbi.com/t5/Power-Query/Azure-SQL-Server-Managed-Instance/m-p/376246> <https://www.mssqltips.com/sqlservertip/5953/create-power-bi-connection-to-azure-sql-database/>

Question #134

HOTSPOT

You have an Azure SQL database named DB1 in the General Purpose service tier.

You need to monitor DB1 by using SQL Insights.

What should you include in the solution? To answer, select the appropriate options in the answer area.

Answer Area

To collect monitoring data, use:

	▼
A virtual machine	
An Azure function	
The Azure Monitor agent	

To store monitoring data, create:

	▼
A Log Analytics workspace	
An Azure SQL database	
An Azure Storage account	

Explanation

Correct Answer:

Answer Area

To collect monitoring data, use:

A virtual machine
An Azure function
The Azure Monitor agent

To store monitoring data, create:

A Log Analytics workspace
An Azure SQL database
An Azure Storage account

Community Discussion

A virtual machine and Log Analytics workspace

seem to be correct answer, SQL Insights stores its data in one or more Log Analytics workspaces. <https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-insights-overview?view=azuresql> <https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-insights-enable?view=azuresql#enable-log-analytics-workspace>

SQL Insights uses dedicated monitoring virtual machines to remotely collect data from your SQL resources. Each monitoring virtual machine has the Azure Monitor agent and the Workload Insights (WLI) extension installed. The given answer is correct

A VM cannot collect the data, the Azure Monitor agent does. Indeed a poorly worded question.

The store part is correct like Pravana said. but the collect is wrong From the same link Pravana provide : You will need to create one or more Azure virtual machines that will be used to collect data to monitor SQL.

Question #135

You have a Microsoft SQL Server 2017 server.

You need to migrate the server to Azure. The solution must meet the following requirements:

- Ensure that the latest version of SQL Server is used.
- Support the SQL Server Agent service.
- Minimize administrative effort.

What should you use?

- A) an Azure SQL Database elastic pool
- B) Azure SQL Database
- C) SQL Server on Azure Virtual Machines (Correct Answer)**
- D) Azure SQL Managed Instance

Explanation

Correct Answer:

C

Community Discussion

In my opinion, both VM and MI ensure the latest version and support Agent service. MI requires less administrative effort so it should be the correct answer. Correct me if I am wrong.

Answer D <https://learn.microsoft.com/en-us/sql/ssms/agent/set-service-startup-account-sql-server-agent-sql-server-configuration-manager?view=sql-server-ver16>
Applies to: SQL Server and Azure SQL Managed Instance

Selected Answer: D

Common solution from all 3 requirements is Azure SQL Managed Instance. Ensure that the latest version of SQL Server is used - Possible solutions - both MI and Azure SQL DB •

Support the SQL Server Agent service - Possible solutions - both MI and VM • Minimize administrative effort - Possible solutions - both MI and Azure SQL DB

Selected Answer: D

Latest version available in MI

Selected Answer: D

The answer is D. Because: ensure that the latest version of SQL Server is used. Only SQL MI is always in latest version. SQL on VM can be in previous version.

Question #136

HOTSPOT

You have a Microsoft SQL Server 2017 server that hosts five databases.

You plan to migrate the databases to Azure.

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

- Automatically scales compute based on the workload demand
- Provides per-second billing

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Azure service:

A single Azure SQL database in the provisioned compute tier
A single Azure SQL database in the serverless computer tier
An Azure SQL Database elastic pool
Azure SQL Managed Instance

Service tier:

Basic
General Purpose
Standard

Explanation

Correct Answer:

Answer Area

Azure service:

- A single Azure SQL database in the provisioned compute tier
- A single Azure SQL database in the serverless computer tier**
- An Azure SQL Database elastic pool
- Azure SQL Managed Instance

Service tier:

- Basic
- General Purpose**
- Standard

Community Discussion

We have five bds, SQL Database in serverless compute tier is for single databases.... so we would need no a single serverless SQL Databases... but five. We need to automatically scale compute based on workload, and be billed by the second...For five databases we would create an elastic pool (with fixed min and max resources for automatic compute scaling of the bds), using vCore model, with provisioned compute tier so we are charged by the second(DTU model charges by hour). vCore model has General Purpose, Business Critical, and Hyperscale.... we would use GEneral purpose. Serverless compute tier es for single databases... so we would need five servers SQL Databases.... not "a single Azure SQL databases in the serverless compute tier".

<https://azure.microsoft.com/en-us/pricing/details/azure-sql-database/single/>
Serverless compute tier also mentioned here.

In the answer area, you should choose: Azure service: A single Azure SQL database in the serverless compute tier Service tier: General Purpose Here's the explanation: A single Azure SQL database in the serverless compute tier: This service automatically scales compute based on the workload demand, which is one of your requirements. Additionally, the serverless tier offers per-second billing, allowing you to pay only for the compute you use. General Purpose service tier: This tier is typically available with the serverless compute model and offers a balanced and scalable compute and storage options suitable for most business workloads.

<https://learn.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview?view=azuresql-db&tabs=general-purpose> Serverless is a compute tier for single databases in Azure SQL Database that automatically scales compute based on workload demand and bills for the amount of compute used per second.

Question #137

You have an on-premises Microsoft SQL Server 2019 database named SQL1 that uses merge replication.

You need to migrate SQL1 to Azure.

Which service should you use?

- A) Azure SQL Edge
- B) Azure SQL Database
- C) SQL Server on Azure Virtual Machines (Correct Answer)**
- D) Azure SQL Managed Instance

Explanation

Correct Answer:

C

Community Discussion

<https://learn.microsoft.com/en-us/azure/azure-sql/database/replication-to-sql-database?view=azuresql-db#supported-configurations>. "Peer-to-peer transactional replication and merge replication are not supported" - so the answer is correct, we need to use VMs

C. SQL Server on Azure Virtual Machines Here's why this option is suitable: SQL Server on Azure Virtual Machines: This option is essentially IaaS (Infrastructure as a Service), which means you get a full virtual machine with full control over the SQL Server instance. It supports SQL Server features just like an on-premises server would, including merge replication. This allows for a smoother migration of databases that rely on specific SQL Server features that are not supported by PaaS (Platform as a Service) options. The other options have limitations regarding merge replication: A. Azure SQL Edge: This service is designed for edge computing scenarios and IoT devices, not for general database hosting. B. Azure SQL Database: This is a PaaS offering that does not support SQL Server's merge replication. D. Azure SQL Managed Instance: While it is the PaaS offering that comes closest to the full capabilities of SQL Server, it still does not support merge replication as of my last update in April 2023.

Question #138

You have an on-premises datacenter that contains a 2-TB Microsoft SQL Server 2019 database named DB1.

You need to recommend a solution to migrate DB1 to an Azure SQL managed instance. The solution must minimize downtime and administrative effort.

What should you include in the recommendation?

A) Log Replay Service (LRS) (Correct Answer)

- B) log shipping
- C) transactional replication
- D) SQL Data Sync

Explanation

Correct Answer:

A

Community Discussion

Answer A. The Log Replay service LRS is only used with Azure SQL Managed Instance.
<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/log-replay-service-migrate?view=azuresql-mi&tabs=sas-token>

Answer A. Less administrative effort compared to transactional replication <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/log-replay-service-migrate?view=azuresql&tabs=sas-token>

it is A, I've done this a couple of times.

it is A, I've done this a couple of times.

A. Log Replay Service (LRS) Here's why LRS is suitable for your scenario: Log Replay Service: This service, also known as Azure Database Migration Service (DMS), supports online migrations with minimal downtime. It allows you to continuously replicate data (with active transaction log replay) from your on-premises SQL Server to an Azure SQL

Managed Instance until you decide to perform the final cutover, thereby minimizing downtime.

Question #139

You have an Azure subscription.

You plan to deploy an instance of SQL Server on Azure Virtual Machines that supports Write Accelerator.

Which virtual machine series should you use?

- A) E-series
- B) G-series
- C) H-series

D) M-series (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

D. M-series Write Accelerator is a feature designed to improve write performance on Azure Managed Disks attached to certain VM series that are optimized for large in-memory database workloads, like the M-series. The M-series VMs are memory-optimized virtual machines suitable for SQL Server workloads, and they support the Write Accelerator feature when used with M-series VMs that are provisioned with Premium Storage.

Write Acceleration is a disk feature that is only available for the M-Series Virtual Machines (VMs). The purpose of write acceleration is to improve the I/O latency of writes against Azure Premium Storage when you need single digit I/O latency due to high volume mission critical OLTP workloads or data warehouse environments. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/storage-configuration?view=azuresql&tabs=windows2016>

Answer D is correct. <https://azure.microsoft.com/en-us/blog/write-accelerator-for-m-series-virtual-machines-now-generally-available/>

Answer D <https://learn.microsoft.com/en-us/azure/virtual-machines/how-to-enable-write-accelerator>

Question #140

You have an on-premises Microsoft SQL Server 2019 instance that hosts a database named DB1.

You have an Azure subscription that contains an Azure SQL database named SQLDB1.

You need to replicate DB1 to SQLDB1.

Which type of replication should you use?

A) transactional (Correct Answer)

- B) peer-to-peer
- C) snapshot
- D) merge

Explanation

Correct Answer:

A

Community Discussion

You can configure an Azure SQL Database as the push subscriber in a one-way transactional or snapshot replication topology. <https://learn.microsoft.com/en-us/azure/azure-sql/database/replication-to-sql-database?view=azuresql>

A. Transactional Replication would be the closest match, with the understanding that Azure SQL Database can only act as a subscriber and the replication would be one-way from your on-premises SQL Server to Azure SQL Database.

Selected Answer: A

A is correct

Yes, the correct answer is A. Snapshot Replication Applies to: SQL Server Azure SQL Managed Instance. So it's not correct. <https://learn.microsoft.com/en-us/sql/relational-databases/replication/snapshot-replication?view=sql-server-ver16>

Transactional replication typically starts with a snapshot of the publication database objects and data. As soon as the initial snapshot is taken, subsequent data changes and schema modifications made at the Publisher are usually delivered to the Subscriber as they occur (in near real time). The data changes are applied to the Subscriber in the same order and within the same transaction boundaries as they occurred at the Publisher; therefore, within a publication, transactional consistency is guaranteed. <https://learn.microsoft.com/en-us/sql/relational-databases/replication/transactional/transactional-replication?view=sql-server-ver16>

Question #141

HOTSPOT

You have two on-premises servers that run Windows Server 2019 and host a Microsoft SQL server 2017 Always On availability group named AG1. AG1 contains a single database named DB1.

You have an Azure subscription. The subscription contains a virtual machine named VM1 that runs Linux.

You need to migrate DB1 to a SQL Server 2019 instance on VM1. The solution must minimize the downtime of DB1 during the migration.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one-point.

Answer Area

To prepare for the migration:

Add a secondary replica to AG1.
Create a SQL Server 2019 Always On availability group on VM1.
Upgrade the on-premises SQL servers to SQL Server 2019.

To perform the migration, use:

A distributed availability group
Azure Migrate
Log shipping

Explanation

Correct Answer:

Answer Area

To prepare for the migration:

Add a secondary replica to AG1.

Create a SQL Server 2019 Always On availability group on VM1.
Upgrade the on-premises SQL servers to SQL Server 2019.

To perform the migration, use:

A distributed availability group

Azure Migrate

Log shipping

Community Discussion

Disregard my previous discussion, Answer that makes sense here is 1) Create a SQL 2019 AG on VM1 and then use 2) Distributed availability group for actual cutover/migration

Add a secondary replica to Ag1 and Azure migrate are correct answers basing on sql version supportability in distributed AG in below url <https://learn.microsoft.com/en-us/sql/database-engine/availability-groups/windows/distributed-availability-groups?view=sql-server-ver16>

And upgrade of the on-premises sql server?

To prepare for the migration, you should upgrade the on-premises SQL servers to SQL Server 2019 and add a secondary replica to AG1. This will ensure that the on-premises servers are compatible with the SQL Server 2019 instance on VM1 and that AG1 can support cross-platform migration. To perform the migration, you should use a distributed availability group. This is a feature that allows you to create a distributed availability group that spans two availability groups, one on Windows and one on Linux. You can then perform a manual failover of the distributed availability group to VM1 and remove the on-premises replicas. This will minimize the downtime of DB1 during the migration.

Step 1: Create a new SQL Server 2019 instance on VM1. You can create a new SQL Server 2019 instance on VM1 by using the Azure portal, the Azure CLI, or the Azure PowerShell modules. Step 2: Use the Azure SQL Migration extension for Azure Data Studio to migrate DB1 to the new SQL Server 2019 instance on VM1.

Question #142

DRAG DROP

You have an Azure SQL database named DB1.

You need to create a partitioned table in DB1.

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

Objects	Answer Area
a partition scheme	
an aligned index	
a filegroup	 
a table	
a partition function	 

Explanation

Correct Answer:

Answer Area

a partition function

a partition scheme

an aligned index

Community Discussion

A partition function A partition scheme A table

<https://learn.microsoft.com/en-us/sql/relational-databases/partitions/partitioned-tables-and-indexes?view=sql-server-ver16>

Reference: <https://learn.microsoft.com/en-us/sql/relational-databases/partitions/create-partitioned-tables-and-indexes?view=sql-server-ver16> Obviously, the answer is: A partition function => A partition scheme => A table

A partition function A partition scheme A table. I think you need to have partitioned table created before creating an aligned index. As its Azure sql database, it DOESNOT support multiple filegroup's. I believe above is the correct sequence

A filegroup Partition Function Partition Scheme

Question #143

HOTSPOT

You have an Azure subscription.

You need to deploy a logical SQL server by using PowerShell. The solution must ensure that the logical SQL server can create Azure AD users and provide Transparent Data Encryption (TDE) with a customer-managed key.

How should you complete the command? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
New-AzSqlServer -ResourceGroupName "RG1" -ServerName "SQL1" -Location "EastUS" -ErrorAction Stop  
-Tags @{Environment="Databases";"Department"="Data Tech"}  
"https://db1.vault.azure.net/keys/dbkey/01234234512345678901234561823942"
```

- assignidentity	- federatedclientID	- keyid
- assignidentity	- federatedclientID	- keyid

Explanation

Correct Answer:

Answer Area

```
New-AzSqlServer -ResourceGroupName "RG1" -ServerName "SQL1" -Location "EastUS" -ErrorAction Stop  
-Tags @{Environment="Databases";"Department"="Data Tech"}  
"https://db1.vault.azure.net/keys/dbkey/01234234512345678901234561823942"
```

- assignidentity	- federatedclientID	- keyid
- assignidentity	- federatedclientID	- keyid

Community Discussion

from URL, I see the first option should be "Assigned Identity". Answer should be "Assigned Identity" and "Key id" <https://learn.microsoft.com/en-us/powershell/module/az.sql/new-azsqlserver?view=azps-10.2.0#code-try-3>

Provided answer seems wrong. There was no indication of cross-tenant CMK in the question so FederatedClientId would be absurd. AssignIdentity and keyId seems like the default good answer

To create a new Azure SQL database with TDE enabled and CMK (customer-managed key) you need to specify -AssignIdentity and -KeyId parameters. <https://learn.microsoft.com/en-us/powershell/module/az.sql/new-azsqlserver?view=azps-10.1.0#example-3-create-a-new-azure-sql-database-server-with-tde-cmk>

<https://learn.microsoft.com/en-us/powershell/module/az.sql/new-azsqlserver?view=azps-10.1.0> -federated parameter is only for cross-account CMK. - -AssignIdentity Generate and assign an Azure Active Directory Identity for this server for use with key management services like Azure KeyVault.

Question #144

You have an Azure subscription.

You create a logical SQL server that hosts four databases. Each database will be used by a separate customer.

You need to ensure that each customer can access only its own database. The solution must minimize administrative effort.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Deny public access.
- B) Create a private endpoint. (Correct Answer)**
- C) Create a database-level firewall rule.
- D) Create a network security group (NSG).
- E) Create a server-level firewall rule.

Explanation

Correct Answer:

B

Community Discussion

ANSWER B, AND C

Selected Answer: B

Answer is B & C, question says 2 actions. please update the answer

Selected Answer: C

B. Create a private endpoint. C. Create a database-level firewall rule.

Two options so B and C

I see that most people voted for B and C. However, based on Microsoft documentation, you cannot create database-level firewall rule without configuring server-level firewall rule first: "You can only create and manage database-level IP firewall rules for master and user databases by using Transact-SQL statements and only after you configure the first server-level firewall." Any thoughts? Reference: <https://learn.microsoft.com/en-us/azure/azure-sql/database/firewall-configure?view=azuresql>

Question #145

DRAG DROP

You have an Azure key vault named Vault1 and a SQL server on Azure Virtual Machines instance named SQL1. SQL1 hosts a database named DB1.

You need to configure Transparent Data Encryption (TDE) on DB1 to use a key in Vault1.

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.

SecExams

Actions

- On SQL1, create a cryptographic provider and a Microsoft SQL Server credential.
- On SQL1, create a symmetric key.
- On SQL1, create a login from the asymmetric key.
- On SQL1, create a login from the symmetric key.
- Create an Azure AD service principal and grant the service principal permissions for Vault1.
- On SQL1, create an asymmetric key.

Answer Area



Explanation

Correct Answer:

Answer Area

Create an Azure AD service principal and grant the service principal permissions for Vault1.

On SQL1, create an asymmetric key.

On SQL1, create a cryptographic provider and a Microsoft SQL Server credential.

On SQL1, create a login from the asymmetric key.

Community Discussion

Provide some logic using Chat: 1. Create an Azure AD service principal and grant the service principal permissions for Vault1: This step is necessary because SQL Server on an Azure VM will use this service principal to authenticate to Azure Key Vault and use the keys within it. 2. On SQL1, create a cryptographic provider and a Microsoft SQL Server credential: This step involves configuring SQL Server to be able to use Azure Key Vault as an Extensible Key Management (EKM) provider, which includes setting up the necessary credentials for authentication. 3. On SQL1, create an asymmetric key: This will be the key from the Azure Key Vault that you will use for TDE. SQL Server will use this key to encrypt the database encryption key. 4. On SQL1, create a login from the asymmetric key: This creates a SQL Server login that is based on the asymmetric key stored in Azure Key Vault, which is necessary for the SQL Server to use that key for TDE.

Answer looks correct <https://www.sqlservercentral.com/blogs/transparent-data-encryption-with-azure-key-vault-1>

<https://learn.microsoft.com/en-us/azure/azure-sql/database/transparent-data-encryption-byok-overview?view=azuresql-mi> In order for the Azure SQL server to use TDE protector stored in AKV for encryption of the DEK, the key vault administrator needs to give the following access rights to the server using its unique Azure Active Directory (Azure AD) identity: get - for retrieving the public part and properties of the key in the Key Vault wrapKey - to be able to protect (encrypt) DEK unwrapKey - to be able to unprotect (decrypt) DEK

Question #146

You have an Azure subscription that contains an instance of SQL Server on an Azure virtual machine named VM1 and an Azure Active Directory Domain Services (Azure AD DS) domain that contains two users named User1 and User 2.

On the default instance of SQL Server on VM1, you create a credential named Credential1 for User1.

You need to ensure that User2 can create a SQL Server Agent proxy that will use Credential1. The solution must use the principle of least privilege.

Which role should you assign to User2?

- A) SQLAgentUserRole
- B) SQLAgentReaderRole
- C) SQLAgentOperatorRole
- D) sysadmin (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

The answer is correct. Based on the following link none of SQL Agent roles are not able to create proxies. So, user2 should have sysadmin permission. <https://learn.microsoft.com/en-us/sql/ssms/agent/sql-server-agent-fixed-database-roles?view=sql-server-ver16>

Selected Answer: D

Only members of the sysadmin fixed server role can create, modify, or delete proxy accounts.

Selected Answer: C

The answer C is correct

Question #147

DRAG DROP

You have an Azure subscription that contains an instance of SQL Server on Azure Virtual Machines named SQLVM1 and a virtual machine named Server1 that runs Windows Server. SQLVM1 and Server1 are joined to an Active Directory Domain Services (AD DS) domain. Server1 hosts a file share named Share1.

You need to ensure that a SQL Server Agent job step on SQLVM1 can access the files in Share1. The solution must use the principle of least privilege.

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.

SecExams**Actions**

- Assign the proxy to the job step.
- Create a login.
- Create a database user.
- Create a credential.
- Create a proxy.

Answer Area

Explanation

Correct Answer:

Answer Area

Create a credential.

Create a proxy.

Assign the proxy to the job step.

Community Discussion

Check limitations: <https://learn.microsoft.com/en-us/sql/ssms/agent/create-a-sql-server-agent-proxy?view=sql-server-ver16>

Someone has a link for this?

Correct.

Question #148

You have an Azure subscription.

You need to deploy an instance of SQL Server on Azure Virtual Machines. The solution must meet the following requirements:

- Custom performance configuration, such as IOPS, capacity, and throughput, must be supported.
- Costs must be minimized.

Which type of disk should you include in the solution?

A) Premium SSD v2 (Correct Answer)

- B) Premium SSD
- C) Standard SSD
- D) Ultra SSD

Explanation

Correct Answer:

A

Community Discussion

Answer B, Ultra disk and Premium SSD v2 cannot be used as OS disk.

Ultra disk is the correct answers Microsoft documentation link <https://learn.microsoft.com/en-us/azure/virtual-machines/disks-types>

Selected Answer: A

<https://learn.microsoft.com/en-us/azure/virtual-machines/disks-types> performance-sensitive workloads that consistently require low latency and high IOPS and throughput and less cost than Ultra disk is Premium SSD v2. Also, ultra disk is mostly for IO-intensive workloads.

On virtual machines two disks are used. One for the operating system, and the other for data. In the first case, the answer is B. In the second case, the answer is D.

Selected Answer: D

Ultra SSD is most suitable.

Question #149

You have an on-premises datacenter that contains a 14-TB Microsoft SQL Server database.

You plan to create an Azure SQL managed instance and migrate the on-premises database to the new instance.

Which three service tiers support the SQL managed instance? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A) General Purpose Standard (Correct Answer)
- B) Business Critical Memory Optimized Premium (Correct Answer)
- C) General Purpose Premium (Correct Answer)
- D) Business Critical Premium
- E) Business Critical Standard

Explanation

Correct Answer:

ABC

Community Discussion

Answer is correct, you can confirm this with the Azure cost calculator. <https://azure.microsoft.com/en-us/pricing/calculator/> SQL MI supports: Service Tier: 1. General Purpose 2. Business Critical Hardware Type: 1. Standard-series 2. Premium-series 3. Premium-series, memory optimized

that makes no sense. I suspect the question is referring to an obsolete storage limit, as mentioned in: <https://techcommunity.microsoft.com/t5/azure-sql-blog/increased-storage-limit-to-16-tb-for-sql-managed-instance/ba-p/2421443>

that makes no sense. I suspect the question is referring to an obsolete storage limit, as mentioned in: <https://techcommunity.microsoft.com/t5/azure-sql-blog/increased-storage-limit-to-16-tb-for-sql-managed-instance/ba-p/2421443>

These service tiers do not have the "Standard" or "Premium" distinction that is common with other Azure SQL offerings like Azure SQL Database.

answer is perfect <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/resource-limits?view=azuresql>

Question #150

DRAG DROP

You have an instance of SQL Server on Azure Virtual Machines named SQL1. SQL1 contains a database named DB1.

You need to enable Transparent Data Encryption (TDE) for DB1.

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

- Objects**
- a database encryption key in the master database
 - a master key in the master database
 - a certificate in DB1
 - a certificate in the master database
 - a master key in DB1
 - a database encryption key in DB1

Answer Area

1	
2	
3	

> ^
 < v

Explanation

Correct Answer:

Answer Area

- 1 a master key in the master database
- 2 a certificate in the master database
- 3 a database encryption key in DB1

Community Discussion

answer is right <https://learn.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption?view=sql-server-ver16#enable-tde>

Answer is correct 1.Create a master key. 2.Create or obtain a certificate protected by the master key. 3.Create a database encryption key and protect it by using the certificate. 4.Set the database to use encryption.

Question #151

You have SQL Server on an Azure virtual machine that contains a database named DB1.

You have an application that queries DB1 to generate a sales report.

You need to see the parameter values from the last time the query was executed.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Enable Last_Query_Plan_Stats in the master database
- B) Enable Lightweight_Query_Profiling in DB1 (Correct Answer)**
- C) Enable Last_Query_Plan_Stats in DB1 (Correct Answer)**
- D) Enable Lightweight_Query_Profiling in the master database
- E) Enable PARAMETER_SNIFFING in DB1

Explanation

Correct Answer:

BC

Last_Query_Plan_Stats allows you to enable or disable collection of the last query plan

statistics (equivalent to an actual execution plan) in sys.dm_exec_query_plan_stats.

Lightweight profiling can be disabled at the database level using the

LIGHTWEIGHT_QUERY_PROFILING database scoped configuration: ALTER DATABASE SCOPED CONFIGURATION SET LIGHTWEIGHT_QUERY_PROFILING = OFF;

Incorrect Answers:

A: Enable it for DB1, not for the master database.

E: Parameter sensitivity, also known as "parameter sniffing", refers to a process whereby SQL Server "sniffs" the current parameter values during compilation or recompilation, and passes it along to the Query Optimizer so that they can be used to generate potentially more efficient query execution plans.

Parameter values are sniffed during compilation or recompilation for the following types of batches:

- ⇒ Stored procedures
- ⇒ Queries submitted via sp_executesql

Prepared queries -

-

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/query-profiling-infrastructure> <https://docs.microsoft.com/en-us/sql/relational-databases/performance/query-profiling-infrastructure>

Community Discussion

Selected Answer: BC

I think answer given is correct. Ref: <https://learn.microsoft.com/en-us/sql/relational-databases/performance/query-profiling-infrastructure?view=sql-server-ver16>

Not sure if "C. Enable Last_Query_Plan_Stats in DB1" would capture anything related to parameters.

Is it ok?

Question #152

HOTSPOT -

You have SQL Server on an Azure virtual machine that contains a database named Db1.

You need to enable automatic tuning for Db1.

How should you complete the statements? To answer, select the appropriate answer in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

ALTER DATABASE [Db1]

```
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=OFF)
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=ON)
SET AUTOMATIC_TUNING=AUTO
SET QUERY_STORE=OFF
SET QUERY_STORE=ON(OPERATION_MODE=READ_ONLY)
SET QUERY_STORE=ON(OPERATION_MODE=READ_WRITE)
```

GO

ALTER DATABASE [Db1]

```
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=OFF)
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=ON)
SET AUTOMATIC_TUNING=AUTO
SET QUERY_STORE=OFF
SET QUERY_STORE=ON(OPERATION_MODE=READ_ONLY)
SET QUERY_STORE=ON(OPERATION_MODE=READ_WRITE)
```

GO

Explanation

Correct Answer:

Answer Area

ALTER DATABASE [Db1]

```
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=OFF)
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=ON)
SET AUTOMATIC_TUNING=AUTO
SET QUERY_STORE=OFF
SET QUERY_STORE=ON(OPERATION_MODE=READ_ONLY)
SET QUERY_STORE=ON(OPERATION_MODE=READ_WRITE)
```

GO

ALTER DATABASE [Db1]

```
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=OFF)
SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN=ON)
SET AUTOMATIC_TUNING=AUTO
SET QUERY_STORE=OFF
SET QUERY_STORE=ON(OPERATION_MODE=READ_ONLY)
SET QUERY_STORE=ON(OPERATION_MODE=READ_WRITE)
```

GO

Box 1: SET QUERY_STORE = ON (OPERATION MODE = READ_WRITE);

Must enable the Query Store.

Incorrect:

If the server may be Azure SQL or Managed Instance then the response should be SET AUTOMATIC_TUNNING=AUTO, but as it is a SQL server the Query store needs to be first enabled.

Box 2: SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN = ON)

To configure individual automatic tuning options via T-SQL, connect to the database and execute the query such as this one:

ALTER DATABASE current SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN = ON)

Setting the individual tuning option to ON will override any setting that database inherited and enable the tuning option. Setting it to OFF will also override any setting that database inherited and disable the tuning option.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/automatic-tuning/>

<https://docs.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable>

Community Discussion

SET QUERY_STORE = ON (OPERATION_MODE = READ_WRITE); <https://docs.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the->

query-store?view=sql-server-ver15 SET AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN = ON); <https://docs.microsoft.com/en-us/sql/relational-databases/automatic-tuning/automatic-tuning?view=sql-server-ver15>

The right answer is as Tomi1234 say because is a VM SQL Server: Box1 - SET QUERY_STORE = ON (OPERATION MODE = READ_WRITE); Box2 - SET AUTOMATIC_TUNNING (FORCE_LAST_GOOD_PLAN = ON); <https://www.sqlshack.com/understanding-automatic-tuning-in-sql-server-2017/> If the server may be Azure SQL or Managed Instance then the response should be: Box1. SET AUTOMATIC_TUNNING=AUTO Box2. SET AUTOMATIC_TUNNING (FORCE_LAST_GOOD_PLAN = ON) and other options are SET AUTOMATIC_TUNNING (FORCE_LAST_GOOD_PLAN = ON, CREATE_INDEX = ON, DROP_INDEX = OFF) <https://docs.microsoft.com/es-es/azure/azure-sql/database/automatic-tuning-enable>

Correct Answer: SET QUERY_STORE = ON (OPERATION MODE = READ_WRITE); SET AUTOMATIC_TUNNING (FORCE_LAST_GOOD_PLAN = ON); Reason: As this is SQL Server hosted on Azure VM and not Azure SQL DB / MI, Query store needs to be first enabled and then automatic plan needs to be applied.

The reference is wrong as it applies only to SQL Database and SQL managed instance. Tomi1234 provided the right answer

Answers in green (in example) are correct. <https://docs.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable>

Question #153

You deploy a database to an Azure SQL Database managed instance.
You need to prevent read queries from blocking queries that are trying to write to the database.
Which database option should set?

- A) PARAMETERIZATION to FORCED
- B) PARAMETERIZATION to SIMPLE
- C) Delayed Durability to Forced
- D) READ_COMMITTED_SNAPSHOT to ON (Correct Answer)**

Explanation

Correct Answer:

D

In SQL Server, you can also minimize locking contention while protecting transactions from dirty reads of uncommitted data modifications using either:

⇒ The READ COMMITTED isolation level with the READ_COMMITTED_SNAPSHOT database option set to ON.

⇒ The SNAPSHOT isolation level.

If READ_COMMITTED_SNAPSHOT is set to ON (the default on SQL Azure Database), the Database Engine uses row versioning to present each statement with a transactionally consistent snapshot of the data as it existed at the start of the statement. Locks are not used to protect the data from updates by other transactions.

Incorrect Answers:

A: When the PARAMETERIZATION database option is set to SIMPLE, the SQL Server query optimizer may choose to parameterize the queries. This means that any literal values that are contained in a query are substituted with parameters. This process is referred to as simple parameterization. When SIMPLE parameterization is in effect, you cannot control which queries are parameterized and which queries are not.

B: You can specify that all queries in a database be parameterized by setting the PARAMETERIZATION database option to FORCED. This process is referred to as forced parameterization.

C: Delayed transaction durability is accomplished using asynchronous log writes to disk. Transaction log records are kept in a buffer and written to disk when the buffer fills or a buffer flushing event takes place. Delayed transaction durability reduces both latency and contention within the system.

Some of the cases in which you could benefit from using delayed transaction durability are:

- ⇒ You can tolerate some data loss.
- ⇒ You are experiencing a bottleneck on transaction log writes.
- ⇒ Your workloads have a high contention rate.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/set-transaction-isolation-level-transact-sql>

Community Discussion

Answer looks correct RCSI

Selected Answer: D

D is correct If READ_COMMITTED_SNAPSHOT is set to OFF (the default on SQL Server), the Database Engine uses shared locks to prevent other transactions from modifying rows while the current transaction is running a read operation. The shared locks also block the statement from reading rows modified by other transactions until the other

transaction is completed. The shared lock type determines when it will be released. Row locks are released before the next row is processed. Page locks are released when the next page is read, and table locks are released when the statement finishes.

I will go for D since A and B are more about query performance and C I simply rule out because have not heard about it. Regarding D: If READ_COMMITTED_SNAPSHOT is set to ON (the default on Azure SQL Database), the Database Engine uses row versioning to present each statement with a transactionally consistent snapshot of the data as it existed at the start of the statement. Locks are not used to protect the data from updates by other transactions.

I thought RCSI is enabled by default in Azure SQL?

If READ_COMMITTED_SNAPSHOT is set to ON (the default on Azure SQL Database), the Database Engine uses row versioning to present each statement with a transactionally consistent snapshot of the data as it existed at the start of the statement. Locks are not used to protect the data from updates by other transactions. <https://learn.microsoft.com/en-us/sql/t-sql/statements/set-transaction-isolation-level-transact-sql?view=sql-server-ver16#arguments>

Question #154

You have an Azure SQL database.

You discover that the plan cache is full of compiled plans that were used only once.

You run the select * from sys.database_scoped_configurations Transact-SQL command and receive the results shown in the following table.

configuration_id	name	value	is_value_default
1	LEGACY_CARDINALITY_ESTIMATION	0	1
2	QUERY_OPTIMIZER_HOTFIXES	0	1
3	OPTIMIZE_FOR_AD_HOC_WORKLOADS	0	1
4	ACCELERATED_PLAN_FORCING	1	1

You need relieve the memory pressure.

What should you configure?

- A) LEGACY_CARDINALITY_ESTIMATION
- B) QUERY_OPTIMIZER_HOTFIXES
- C) OPTIMIZE_FOR_AD_HOC_WORKLOADS (Correct Answer)**

D) ACCELERATED_PLAN_FORCING

Explanation

Correct Answer:

C

OPTIMIZE_FOR_AD_HOC_WORKLOADS = { ON | OFF }

Enables or disables a compiled plan stub to be stored in cache when a batch is compiled for the first time. The default is OFF. Once the database scoped configuration

OPTIMIZE_FOR_AD_HOC_WORKLOADS is enabled for a database, a compiled plan stub will be stored in cache when a batch is compiled for the first time. Plan stubs have a smaller memory footprint compared to the size of the full compiled plan.

Incorrect Answers:

A: LEGACY_CARDINALITY_ESTIMATION = { ON | OFF | PRIMARY }

Enables you to set the query optimizer cardinality estimation model to the SQL Server 2012 and earlier version independent of the compatibility level of the database. The default is OFF, which sets the query optimizer cardinality estimation model based on the compatibility level of the database.

B: QUERY_OPTIMIZER_HOTFIXES = { ON | OFF | PRIMARY }

Enables or disables query optimization hotfixes regardless of the compatibility level of the database. The default is OFF, which disables query optimization hotfixes that were released after the highest available compatibility level was introduced for a specific version (post-RTM).

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/alter-database-scoped-configuration-transact-sql>

Community Discussion

Option C is correct. The optimize for ad hoc workloads option is used to improve the efficiency of the plan cache for workloads that contain many single use ad hoc batches. When this option is set to 1, the Database Engine stores a small compiled plan stub in the plan cache when a batch is compiled for the first time, instead of the full compiled plan. This helps to relieve memory pressure by not allowing the plan cache to become filled with compiled plans that are not reused. Article: <https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/optimize-for-ad-hoc-workloads-server-configuration-option?view=sql-server-ver15>

Selected Answer: C

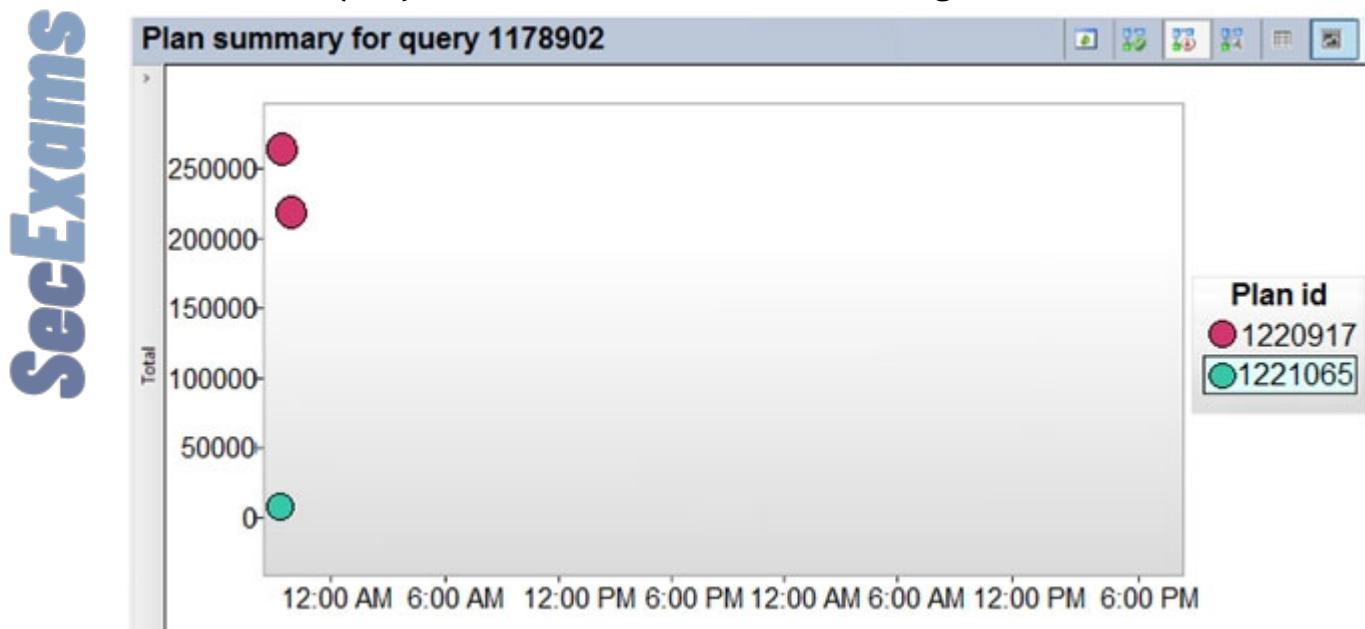
C is correct, C. OPTIMIZE_FOR_AD_HOC_WORKLOADS When this option is set to 1, the Database Engine stores a small compiled plan stub in the plan cache when a batch is compiled for the first time, instead of the full compiled plan. This may help to relieve memory pressure by not allowing the plan cache to become filled with compiled plans that aren't reused.

for the exam, option C is correct. for real life, not really:<https://erikdarlingdata.com/no-really-dont-optimize-for-ad-hoc-workloads-as-a-best-practice/>

Question #155

You have SQL Server on an Azure virtual machine that contains a database named DB1.

You view a plan summary that shows the duration in milliseconds of each execution of query 1178902 as shown in the following exhibit:



What should you do to ensure that the query uses the execution plan which executes in the least amount of time?

A) Force the query execution plan for plan 1221065. (Correct Answer)

- B) Run the DBCC FREEPROCCACHE command.
- C) Force the query execution plan for plan 1220917.
- D) Disable parameter sniffing.

Explanation

Correct Answer:

A

As per exhibit, the execution plan 1221065 has lower execution time compared to plan 1220917.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/query-store-usage-scenarios>

Community Discussion

correct is A

Agree, 1221065 has the lower execution time. Therefore, the better option is A

Agree, 1221065 has the lower execution time. Therefore, the better option is A

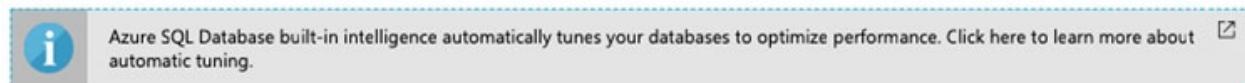
This explanation make me laugh. :)

This explanation make me laugh. :)

Question #156

HOTSPOT -

You have an Azure SQL database named DB1. The automatic tuning options for DB1 are configured as shown in the following exhibit.



Inherit from:

Server Azure defaults Don't inherit

The database is inheriting automatic tuning configuration from Azure defaults.

Configure the automatic tuning options

OPTION	DESIRED STATE	CURRENT STATE
FORCE PLAN	<input type="button"/> ON <input type="button"/> OFF <input checked="" type="button"/> INHERIT	ON Auto-configured by Azure
CREATE INDEX	<input type="button"/> ON <input type="button"/> OFF <input checked="" type="button"/> INHERIT	ON Auto-configured by Azure
DROP INDEX	<input type="button"/> ON <input type="button"/> OFF <input checked="" type="button"/> INHERIT	ON Forced by user

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

Statements	Yes	No
Nonclustered indexes will be added to tables to improve performance.	<input type="radio"/>	<input type="radio"/>
Columns will be added to existing indexes automatically.	<input type="radio"/>	<input type="radio"/>
The query execution plan will revert to a previous plan if query performance degrades.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
Nonclustered indexes will be added to tables to improve performance.	<input type="radio"/>	<input checked="" type="radio"/>
Columns will be added to existing indexes automatically.	<input type="radio"/>	<input checked="" type="radio"/>
The query execution plan will revert to a previous plan if query performance degrades.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

By default CREATE INDEX is disabled. It is here configured as INHERIT so it is disabled.

Box 2: No -

By default DROP INDEX is disabled.

Box 3: Yes -

FORCE LAST GOOD PLAN (automatic plan correction) - Identifies Azure SQL queries using an execution plan that is slower than the previous good plan, and queries using the last known good plan instead of the regressed plan.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable>

Community Discussion

Answer given is correct. Refer to current state, is ON

Should be No, NO, Yes, As Azure defaults are FORCE_LAST_GOOD_PLAN is enabled, CREATE_INDEX is disabled, and DROP_INDEX is disabled. <https://docs.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable>

Yes - It will create nonclustered indexes
No - It can't add columns to existing indexes
Yes
- It will revert to prior plans automatically in case of regression

The defaults have been overridden in this scenario.

The defaults have been overridden in this scenario.

Question #157

You have an Azure SQL database named DB1. You run a query while connected to DB1.

You review the actual execution plan for the query, and you add an index to a table referenced by the query.

You need to compare the previous actual execution plan for the query to the Live Query Statistics.

What should you do first in Microsoft SQL Server Management Studio (SSMS)?

- A) For DB1, set QUERY_CAPTURE_MODE of Query Store to All.
- B) Run the SET SHOWPLAN_ALL Transact-SQL statement.
- C) Save the actual execution plan. (Correct Answer)**
- D) Enable Query Store for DB1.

Explanation

Correct Answer:

C

The Plan Comparison menu option allows side-by-side comparison of two different execution plans, for easier identification of similarities and changes that explain the different behaviors for all the reasons stated above. This option can compare between:
Two previously saved execution plan files (.sqlplan extension).
One active execution plan and one previously saved query execution plan.
Two selected query plans in Query Store.

Community Discussion

C: is correct.

Selected Answer: C

If before adding the index, you have saved the plan, then C is correct answer for sure. But if you didn't save it then need to get it from Query Store. From the context of the question itself, seem to be C is the nearest answer.

Selected Answer: D

D. Enable Query Store for DB1. By enabling Query Store for the database, you can compare the previous execution plan to the new one. This feature allows you to view query performance over time, identify regressions, and diagnose issues caused by changes in the execution plan. The Query Store saves the history of queries, execution plans, and runtime statistics, making it easy to compare the actual execution plan before and after the index addition.

Answer should be D. C does not allow comparing a Live query statistics, only 2 save query plans. D allows you to compare a previous query plan against a plan of a running query.
<https://learn.microsoft.com/en-us/sql/relational-databases/performance/query-store-usage-scenarios?view=sql-server-ver16>

Selected Answer: C

C is correct: <https://learn.microsoft.com/en-us/sql/relational-databases/performance/compare-execution-plans?view=sql-server-ver16>

Question #158

You have an Azure SQL database.

Users report that the executions of a stored procedure are slower than usual.

You suspect that a regressed query is causing the performance issue.

You need to view the query execution plan to verify whether a regressed query is causing the issue. The solution must minimize effort.

What should you use?

- A) Performance Recommendations in the Azure portal
- B) Extended Events in Microsoft SQL Server Management Studio (SSMS)
- C) Query Store in Microsoft SQL Server Management Studio (SSMS) (Correct Answer)**
- D) Query Performance Insight in the Azure portal

Explanation

Correct Answer:

C

Use the Query Store Page in SQL Server Management Studio.

Query performance regressions caused by execution plan changes can be non-trivial and time consuming to resolve.

Since the Query Store retains multiple execution plans per query, it can enforce policies to direct the Query Processor to use a specific execution plan for a query.

This is referred to as plan forcing. Plan forcing in Query Store is provided by using a mechanism similar to the USE PLAN query hint, but it does not require any change in user applications. Plan forcing can resolve a query performance regression caused by a plan change in a very short period of time.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the-query-store>

Community Discussion

The answer is correct verified in microsoft docoument

Selected Answer: C

<https://learn.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the-query-store?view=sql-server-ver16#Regressed>

C: is correct

<https://learn.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the-query-store?view=sql-server-ver16> Use the Regressed Queries feature.

Selected Answer: D

"Query Performance Insight" (option D) in the Azure portal.

Question #159

You have an Azure SQL database. The database contains a table that uses a columnstore index and is accessed infrequently.

You enable columnstore archival compression.

What are two possible results of the configuration? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A) Queries that use the index will consume more disk I/O.

B) Queries that use the index will retrieve fewer data pages. (Correct Answer)

C) The index will consume more disk space.

D) The index will consume more memory.

E) Queries that use the index will consume more CPU resources. (Correct Answer)

Explanation

Correct Answer:

BE

For rowstore tables and indexes, use the data compression feature to help reduce the size of the database. In addition to saving space, data compression can help improve performance of I/O intensive workloads because the data is stored in fewer pages and queries need to read fewer pages from disk.

Use columnstore archival compression to further reduce the data size for situations when you can afford extra time and CPU resources to store and retrieve the data.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/data-compression/data-compression>

Community Discussion

B and E is correct.

The answer is correct

Selected Answer: BE

Compressing columnstore indexes with archival compression, causes the index to perform slower than columnstore indexes that do not have the archival compression.

Use archival compression only when you can afford to use extra time and CPU resources to compress and retrieve the data. The benefit of archival compression, is reduced storage, which is useful for data that is not accessed frequently. For example, if you have a partition for each month of data, and most of your activity is for the most recent months, you could archive older months to reduce the storage requirements.

Selected Answer: BE

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

Question #160

You are designing a dimension table in an Azure Synapse Analytics dedicated SQL pool.

You need to create a surrogate key for the table. The solution must provide the fastest query performance.

What should you use for the surrogate key?

A) an IDENTITY column (Correct Answer)

- B) a GUID column
- C) a sequence object

Explanation

Correct Answer:

A

Dedicated SQL pool supports many, but not all, of the table features offered by other databases.

Surrogate keys are not supported. Implement it with an Identity column.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview>

Community Discussion

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-identity> Surrogate Keys. Implement with Identity - it is meant that Identity is OK

this is a 100% dp-300 questoin

this is a 100% dp-300 questoin

This question is more related to the DP-203 exam. I've never seen a topic like this in MeasureUp practice test.

i don't know. The only one correct is B Dedicated SQL pool supports many, but not all, of the table features offered by other databases. The following list shows some of the table features that aren't supported in dedicated SQL pool: - Foreign key, Check Table Constraints - Computed Columns - Indexed Views - Sequence (OPTION C) - Sparse Columns - Surrogate Keys. Implement with Identity (OPTION A). - Synonyms - Triggers - Unique Indexes - User-Defined Types <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview#unsupported-table-features>

Question #161

You are designing a star schema for a dataset that contains records of online orders. Each record includes an order date, an order due date, and an order ship date.

You need to ensure that the design provides the fastest query times of the records when querying for arbitrary date ranges and aggregating by fiscal calendar attributes.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) Create a date dimension table that has a DateTime key.
- B) Create a date dimension table that has an integer key in the format of YYYYMMDD. (Correct Answer)**
- C) Use built-in SQL functions to extract date attributes.
- D) Use integer columns for the date fields. (Correct Answer)**
- E) Use DateTime columns for the date fields.

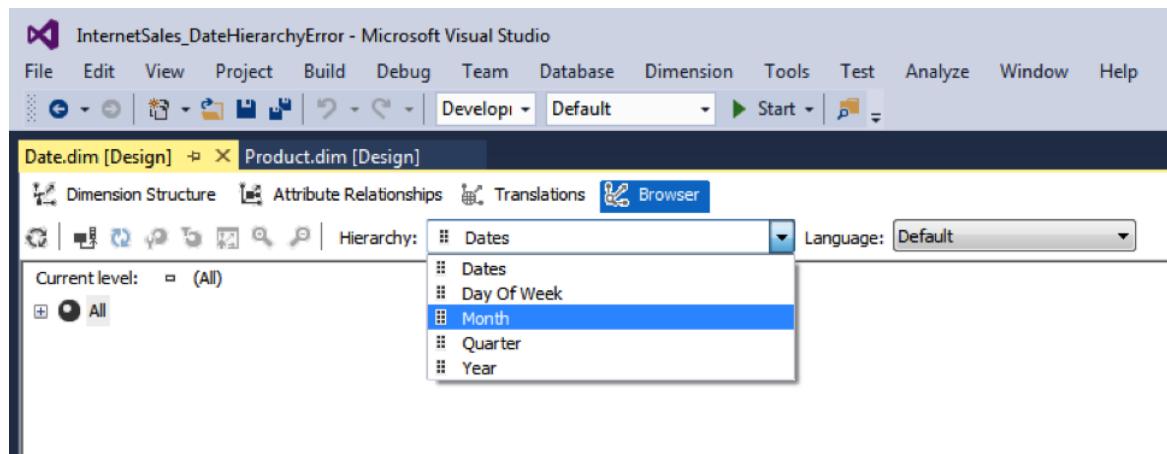
Explanation

Correct Answer:

BD

Why use a Date Dimension Table in a Data Warehouse.

The Date dimension is one of these dimension tables related to the Fact. Here is a simple Data Diagram for a Data Mart of Internet Sales information for the Adventure Works DW database which can be obtained for free from CodePlex or other online sources.



The relationship is created by the surrogate keys columns (integer data type) rather than the date data type.

The query users have to write against a Data Mart are much simpler than against a transaction database. There are less joins because of the one to many relationships between the fact dimension table(s). The dimension tables are confusing to someone who has been normalizing databases as a career. The dimension is a flattened or de-normalized table. This creates cases of duplicate data, but the simplistic query overrides the duplicate data in a dimensional model.

Reference:

<https://www.mssqltips.com/sqlservertip/3117/defining-role-playing-dimensions-for-sql-server-analysis-services/> https://community.idera.com/database-tools/blog/b/community_blog/posts/why-use-a-date-dimension-table-in-a-data-warehouse

Community Discussion

This is for DP-203 exam.

Why DP203?

Why DP203?

This is for DP-203 exam

It talks about Data Warehouse, is out of scope

Question #162

HOTSPOT -

You are designing an enterprise data warehouse in Azure Synapse Analytics that will store website traffic analytics in a star schema.

You plan to have a fact table for website visits. The table will be approximately 5 GB.

You need to recommend which distribution type and index type to use for the table. The solution must provide the fastest query performance.

What should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Distribution:

Hash
Round robin
Replicated

Index:

Clustered columnstore
Clustered
Nonclustered

Explanation

Correct Answer:

Answer Area

Distribution:

Hash
Round robin
Replicated

Index:

Clustered columnstore
Clustered
Nonclustered

Box 1: Hash -

Consider using a hash-distributed table when:

The table size on disk is more than 2 GB.

The table has frequent insert, update, and delete operations.

Box 2: Clustered columnstore -

Clustered columnstore tables offer both the highest level of data compression and the best overall query performance.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-distribute> <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-index>

Community Discussion

looks correct

This question is related to the DP-203 exam: Data Engineering on Microsoft Azure.

DP-203

This is for DP-203 exam

do203 question

Question #163

You have an Azure Data Factory pipeline that is triggered hourly.

The pipeline has had 100% success for the past seven days.

The pipeline execution fails, and two retries that occur 15 minutes apart also fail. The third failure returns the following error.

```
ErrorCode=UserErrorFileNotFoundException,  
'Type=Microsoft.DataTransfer.Common.Shared.HybridDeliveryException,Message=ADLS  
Gen2 operation failed for: Operation returned an invalid status code  
'NotFound'. Account: 'contosoproductsouth' FileSystem: wwi.Path:  
'BIKES/CARBON/year=2021/month=01/day=10/hour=06'. ErrorCode:  
'PathNotFound'.Message: 'The specified path does not exist.'. RequestId:  
'6d269b78-901f-001b-4924-e7a7bc000000'. TimeStamp: 'Sun, 10 Jan 2021 07:45:05'
```

What is a possible cause of the error?

- A) From 06:00 to 07:00 on January 10, 2021, there was no data in wwi/BIKES/CARBON.
- B) The parameter used to generate year=2021/month=01/day=10/hour=06 was incorrect.
(Correct Answer)**
- C) From 06:00 to 07:00 on January 10, 2021, the file format of data in wwi/BIKES/CARBON was incorrect.
- D) The pipeline was triggered too early.

Explanation

Correct Answer:

B

A file is missing.

Incorrect:

Not A, not C, not D: Time of the error is 07:45.

Community Discussion

DB-203?

This question is related to the DP-203 exam: Data Engineering on Microsoft Azure.

I think the correct answer is A.

A is correct answer

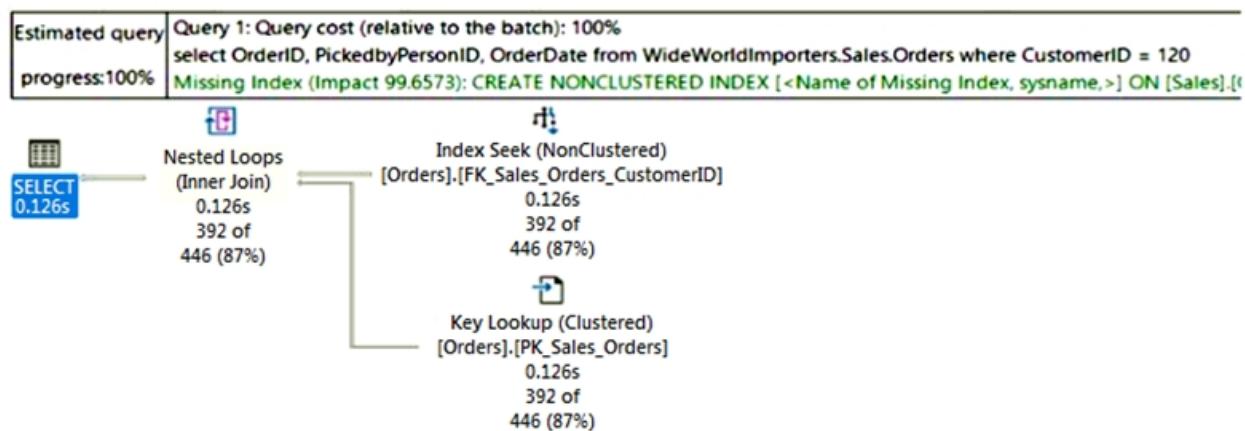
This is for DP-203 exam

Question #164

HOTSPOT -

You have an Azure SQL database.

You are reviewing a slow performing query as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The exhibit shows **[answer choice]**.

an actual execution plan
an estimated execution plan
Live Query Statistics

The **[answer choice]** operator in the execution plan indicates that the query would benefit from performance tuning.

Index Seek
Key Lookup
Nested Loops

Explanation

Correct Answer:

Answer Area

The exhibit shows [answer choice].

an actual execution plan
an estimated execution plan
Live Query Statistics

The [answer choice] operator in the execution plan indicates that the query would benefit from performance tuning.

Index Seek
Key Lookup
Nested Loops

Box 1: Live Query Statistics -

Live Query Statistics as it a percentage of the execution.

Box 2: Key Lookup -

The use of a Key Lookup operator in a query plan indicates that the query might benefit from performance tuning. For example, query performance might be improved by adding a covering index.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/live-query-statistics?view=sql-server-ver15> <https://docs.microsoft.com/en-us/sql/relational-databases/showplan-logical-and-physical-operators-reference>

Community Discussion

KeyLookup - yes, but this is Live Query Statistics (e.g. percentage of execution)

KeyLookup - yes, but this is Live Query Statistics (e.g. percentage of execution)

Estimated execution plan and Key Lookup

As per below, 2nd selection has to be "Key Lookup" (not Nested loop). The Key Lookup operator is a bookmark lookup on a table with a clustered index. The Argument column contains the name of the clustered index and the clustering key used to look up the row in the clustered index. Key Lookup is always accompanied by a Nested Loops operator. If the WITH PREFETCH clause appears in the Argument column, the query processor has

determined that it is optimal to use asynchronous prefetching (read-ahead) when looking up bookmarks in the clustered index. The use of a Key Lookup operator in a query plan indicates that the query might benefit from performance tuning. For example, query performance might be improved by adding a covering index. <https://docs.microsoft.com/en-us/sql/relational-databases/showplan-logical-and-physical-operators-reference?view=sql-server-ver15>

Live statistics can be recognized from the Query Progress box top left. The nested loop operator is used whenever no appropriate index is available for key lookup or index seek. An index is always faster, so Nested Loop means opportunity for performance improvement.

Question #165

You have an Azure SQL managed instance.

You need to gather the last execution of a query plan and its runtime statistics.

The solution must minimize the impact on currently running queries.

What should you do?

- A) Generate an estimated execution plan.
- B) Generate an actual execution plan.
- C) Run `sys.dm_exec_query_plan_stats`. (Correct Answer)**
- D) Generate Live Query Statistics.

Explanation

Correct Answer:

C

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-exec-query-plan-stats-transact-sql?view=sql-server-ver15>

Community Discussion

c: is correct

parece correcto

<https://learn.microsoft.com/en-us/training/modules/explore-query-performance-optimization/3-explain-estimated-actual>

The DMV has the minimum impact, like said in the question.

looks correct

Question #166

HOTSPOT -

You have an Azure SQL database named db1 on a server named server1.

You use Query Performance Insight to monitor db1.

You need to modify the Query Store configuration to ensure that performance monitoring data is available as soon as possible.

Which configuration setting should you modify and which value should you configure? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Configuration setting:

DATA_FLUSH_INTERVAL_SECONDS
INTERVAL_LENGTH_MINUTES
MAX_PLANS_PER_QUERY
QUERY_CAPTURE_MODE

Value:

1
60
CUSTOM
ON

Explanation

Correct Answer:

Answer Area

Configuration setting:

DATA_FLUSH_INTERVAL_SECONDS
INTERVAL_LENGTH_MINUTES
MAX_PLANS_PER_QUERY
QUERY_CAPTURE_MODE

Value:

1
60
CUSTOM
ON

Box 1: INTERVAL_LENGTH_MINUTES -

INTERVAL_LENGTH_MINUTES defines size of time window during which collected runtime statistics for query plans are aggregated and persisted. Every active query plan has at most one row for a period of time defined with this configuration.

Default: 60 -

Box 2: 1 -

Statistics Collection Interval (INTERVAL_LENGTH_MINUTES): Defines the level of granularity for the collected runtime statistic, expressed in minutes. The default is 60 minutes. Consider using a lower value if you require finer granularity or less time to detect and mitigate issues.

Use SQL Server Management Studio or Transact-SQL to set a different value for Statistics Collection Interval:

```
ALTER DATABASE [QueryStoreDB]
SET QUERY_STORE (INTERVAL_LENGTH_MINUTES = 60);
```

Reference:

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

Community Discussion

Its OK. Consider using a lower value if you require finer granularity or less time to detect and mitigate issues. Statistics Collection Interval: ALTER DATABASE [QueryStoreDB] SET QUERY_STORE (INTERVAL_LENGTH_MINUTES = 60); It is the default value, put 1 instead of 60 <https://docs.microsoft.com/en-us/sql/relational-databases/performance/best-practice-with-the-query-store?view=sql-server-ver15>

its ok?

Question #167

You have an Azure SQL Database managed instance.

The instance starts experiencing performance issues.

You need to identify which query is causing the issue and retrieve the execution plan for the query. The solution must minimize administrative effort.

What should you use?

- A) SQL Profiler
- B) Extended Events
- C) Query Store
- D) dynamic management views (Correct Answer)**

Explanation

Correct Answer:

D

Use the dynamic management view sys.dm_exec_requests to track currently executing queries and the associated worker time.

Incorrect:

Not C: DMVs that track Query Store and wait statistics show results for only successfully completed and timed-out queries.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/identify-query-performance-issues>

Community Discussion

C. Query Store

Selected Answer: C

Use Query Store to find wait statistics for each query over time. In Query Store, wait types are combined into wait categories. You can find the mapping of wait categories to wait types in sys.query_store_wait_stats. <https://learn.microsoft.com/en-us/azure/azure-sql/database/identify-query-performance-issues?view=azuresql>

When you see "must minimize administrative effort", go to DMVs.

Selected Answer: D

The solution must minimize administrative effort

Couldnt you make the argument that the Query Store would be the first place to go. It is virtually no administrative overhead to check the Regressed Queries report for example. Can you really say that D is correct and C is incorrect?

Question #168

You have an Azure SQL database named DB1.

You need to display the estimated execution plan of a query by using the query editor in the Azure portal.

What should you do first?

A) Run the SET SHOWPLAN_ALL Transact-SQL statement. (Correct Answer)

B) For DB1, set QUERY_CAPTURE_MODE of Query Store to All.

C) Run the SET FORCEPLAN Transact-SQL statement.

D) Enable Query Store for DB1.

Explanation

Correct Answer:

A

The SET SHOWPLAN_ALL command causes Microsoft SQL Server not to execute Transact-SQL statements. Instead, SQL Server returns detailed information about how the statements are executed and provides estimates of the resource requirements for the statements.

Reference:

[https://docs.microsoft.com/en-us/sql/t-sql/statements/set-showplan-all-transact-sql?
view=sql-server-ver15](https://docs.microsoft.com/en-us/sql/t-sql/statements/set-showplan-all-transact-sql?view=sql-server-ver15)

Community Discussion

Selected Answer: A

When SET SHOWPLAN_ALL is ON, SQL Server returns execution information for each statement without executing it, and Transact-SQL statements are not executed.

Selected Answer: A

look correct

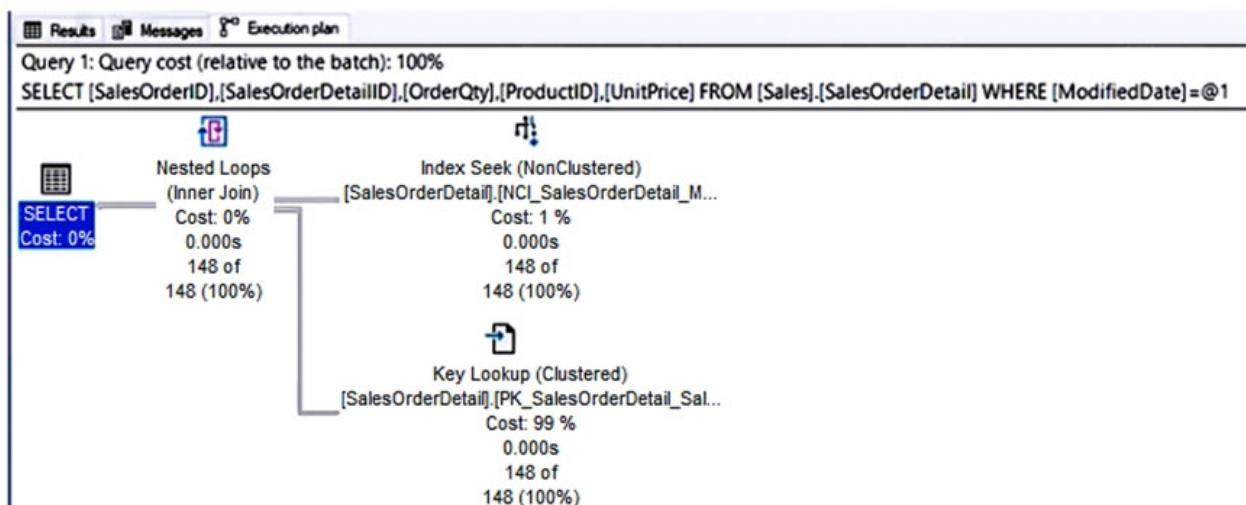
looks good, what do you think?

Question #169

HOTSPOT -

You have an Azure SQL database.

You have a query and the associated execution plan as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The performance issue stems from the **[answer choice]** operator.

Select
Index Seek
Key Lookup
Nested Loops

The performance issue can be resolved by adding include columns to the **[answer choice]**.

heap
clustered index
nonclustered index

Explanation

Correct Answer:

Answer Area

The performance issue stems from the **[answer choice]** operator.

Select
Index Seek
Key Lookup
Nested Loops

The performance issue can be resolved by adding include columns to the **[answer choice]**.

heap
clustered index
nonclustered index

Box 1: Key Lookup -

The Key Lookup cost is 99% so that is the performance bottleneck.

Box 2: nonclustered index -

The key lookup on the clustered index is used because the nonclustered index does not include the required columns to resolve the query. If you add the required columns to the nonclustered index, the key lookup will not be required.

Community Discussion

The given answer looks correct

Yes, the query is just pulling from one table so by making the nonclustered index a covering index including all the additional required fields will eliminate the need for the lookup.

Question #170

You have an instance of SQL Server on Azure Virtual Machines that has a database named DB1.

You plan to implement Azure SQL Data Sync for DB1.

Which isolation level should you configure?

- A) SERIALIZABLE
- B) SNAPSHOT (Correct Answer)**
- C) READ UNCOMMITTED

D) READ COMMITTED

Explanation

Correct Answer:

B

Data Sync general requirements include:

- * Snapshot isolation must be enabled for both Sync members and hub.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-data-sync-data-sql-server-sql-database>

Community Discussion

Selected Answer: B

Snapshot isolation must be enabled for both Sync members and hub. <https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-data-sync-data-sql-server-sql-database?view=azuresql>

Selected Answer: B

Snapshot isolation must be enabled for both Sync members and hub. For more info, see Snapshot Isolation in SQL Server. Taken from: <https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-data-sync-data-sql-server-sql-database?view=azuresql>

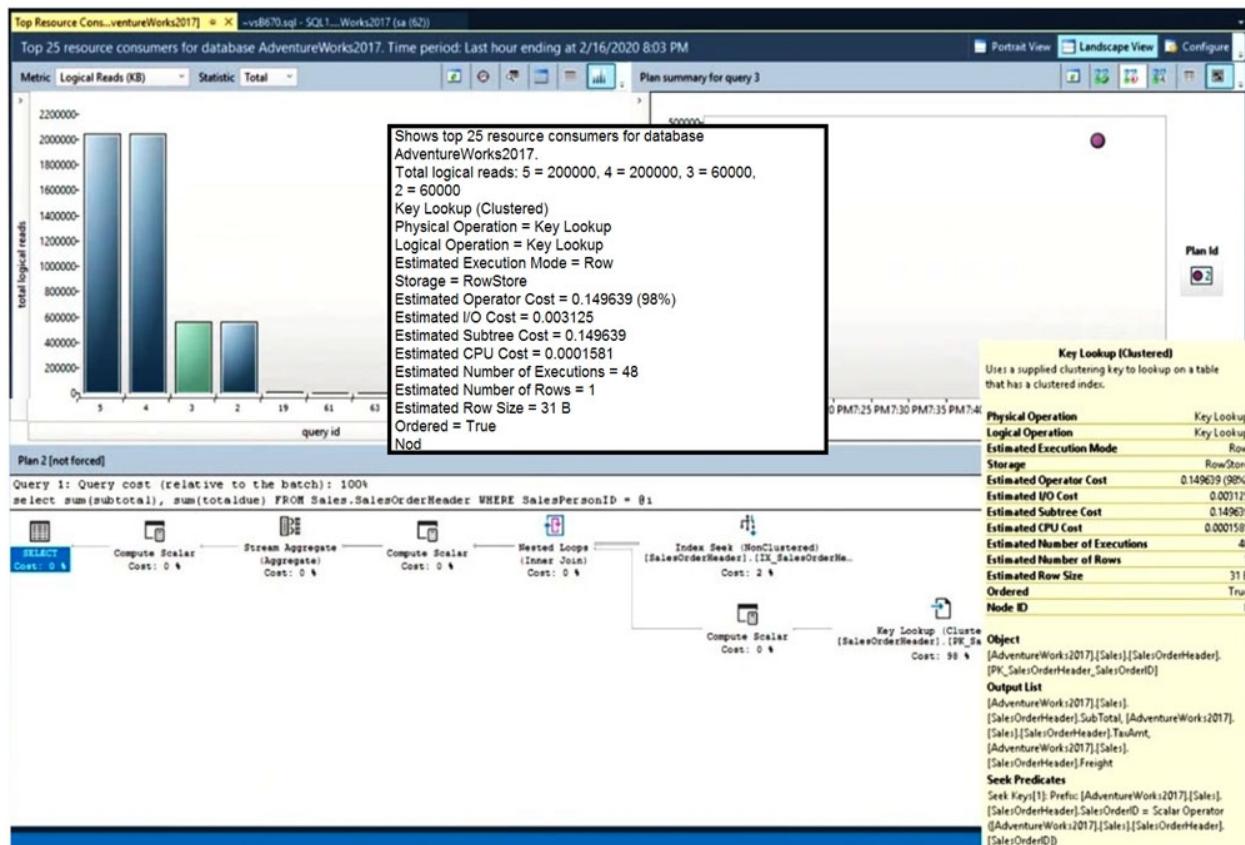
according to my knowledge and Bing Chat the answer is Read Committed

Question #171

HOTSPOT -

You have SQL Server on an Azure virtual machine.

You review the query plan shown in the following exhibit.



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

Statements	Yes	No
You will reduce the I/O usage and the query execution time if you force the query plan.	<input type="radio"/>	<input type="radio"/>
You will increase the I/O usage and the query execution time if you create a new index on the SalesOrderHeader table.	<input type="radio"/>	<input type="radio"/>
You will reduce the I/O usage and the query execution time if you include the SubTotal, TaxAmt, and Freight columns in the PK_SalesOrderHeader_SalesOrderID index.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
You will reduce the I/O usage and the query execution time if you force the query plan.	<input type="radio"/>	<input checked="" type="radio"/>
You will increase the I/O usage and the query execution time if you create a new index on the SalesOrderHeader table.	<input type="radio"/>	<input checked="" type="radio"/>
You will reduce the I/O usage and the query execution time if you include the SubTotal, TaxAmt, and Freight columns in the PK_SalesOrderHeader_SalesOrderID index.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

There is only one query plan available. Force has no effect.

Box 2: No -

Adding an index will not increase IO usage.

Box 3: Yes -

The performance would improve.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the-query-store>

Community Discussion

For me all the three are NO: 1.If you force that query plan, the behaviour will be always the same, so you will not reduce or increase the I/O compared with what we see in the image. Only in the case you see in the chart another and worst query plan used by the query, choosing this one will reduce the average I/O. 2.You can create another index in the table but if using it is worse than using the current one, the sql engine will not choose it in the plan. 3.PK is the clustered index and it has all columns by definition.

Answers are No, No and Yes. 1) force plan - there is only one execution plan. Forcing it will not change the run time. 2) No - adding another index can incur maintenance overhead, but it is not going to INCREASE the IO. If it did the optimizer would use the plan it already has. 3) Yes - Agreed with whomever said the extra columns should not be added to the primary key, but design is not the question. Question is will it make the plan more efficient. Yes it will. Currently we have a lookup. Adding those columns will make the index a covering index for this query and eliminate the lookup.

I manually tested the query run on sample adventureworks DB and observed saving in Logical reads. logical reads reduced from 689 to 5 which confirms the correct answer for third part is Yes. (it may not be a good design decision but it does provide improved performance). Correct answer as per my analysis - No, No, Yes

I manually tested the query run on sample adventureworks DB and observed saving in Logical reads. logical reads reduced from 689 to 5 which confirms the correct answer for third part is Yes. (it may not be a good design decision but it does provide improved performance). Correct answer as per my analysis - No, No, Yes

Up-voted by mistake.

Question #172

A data engineer creates a table to store employee information for a new application. All employee names are in the US English alphabet. All addresses are locations in the United States. The data engineer uses the following statement to create the table.

```
CREATE TABLE dbo.Employee
(
    EmployeeID      INT IDENTITY(1,1) PRIMARY KEY CLUSTERED NOT NULL,
    FirstName        VARCHAR(100) NOT NULL,
    LastName         VARCHAR(100) NOT NULL,
    Title            VARCHAR(100) NULL,
    LastHireDate     DATETIME NULL,
    StreetAddress1   VARCHAR(500) NOT NULL,
    StreetAddress2   VARCHAR(500) NOT NULL,
    StreetAddress3   VARCHAR(500) NOT NULL,
    City             VARCHAR(200) NOT NULL,
    StateName        VARCHAR(20) NOT NULL,
    Salary            VARCHAR(20) NULL,
    PhoneNumber      VARCHAR(20) NOT NULL
)
```

You need to recommend changes to the data types to reduce storage and improve performance.

Which two actions should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) Change Salary to the money data type. (Correct Answer)

- B) Change PhoneNumber to the float data type.
- C) Change LastHireDate to the datetime2(7) data type.
- D) Change PhoneNumber to the bigint data type.

E) Change LastHireDate to the date data type. (Correct Answer)

Explanation

Correct Answer:

AE

A: Money takes less space compared to VARCHAR(20)

E: Date takes less space compared to Datetime.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/data-types/data-types-transact-sql>

Community Discussion

Answers are correct. Date is smaller than DateTime. Changing salary to money means you can run calculations directly against the value improving performance e.g. WHERE salary > 50000. B C & D are definitely wrong for the same reasons.

Answer is correct, but they should have used the smallmoney data type not money. ;-)

Answers are correct. The chosen data types use less storage. Money data type takes 8 bytes, less than Varchar(20) which is 20 bytes. Date takes up 3 bytes which is less than Datetime which takes up 8 bytes

Selected Answer: AE

Answer is correct

<https://docs.microsoft.com/en-us/sql/t-sql/data-types/data-types-transact-sql?view=sql-server-ver15> MONEY 8 BYTES (-922,337,203,685,477.5808 to 922,337,203,685,477.5807). If your salary is greater than 1000.0000 then better than varchar(20) DATETIME=8 BYTES >DATETIME2(PRECISION7) 7 bytes for precision 3 or 4.

Question #173

You have an Azure SQL database.

You identify a long running query.

You need to identify which operation in the query is causing the performance issue.

What should you use to display the query execution plan in Microsoft SQL Server Management Studio (SSMS)?

A) Live Query Statistics (Correct Answer)

- B) an estimated execution plan
- C) an actual execution plan
- D) Client Statistics

Explanation

Correct Answer:

A

SQL Server Management Studio provides the ability to view the live execution plan of an active query. This live query plan provides real-time insights into the query execution process as the controls flow from one query plan operator to another. The live query plan displays the overall query progress and operator-level run-time execution statistics such as the number of rows produced, elapsed time, operator progress, etc. Because this data is available in real time without needing to wait for the query to complete, these execution statistics are extremely useful for debugging query performance issues.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/performance/live-query-statistics>

Community Discussion

Selected Answer: C

Its supposed to be C.

Selected Answer: A

Live Query Statistics

However, for identifying a long-running query and analyzing its execution in real-time, the best choice would be the actual execution plan. This option allows you to see the actual query plan generated by the SQL Server engine during query execution, including the actual number of rows, actual resource consumption, and any potential issues such as missing indexes or inefficient operations.

<https://www.mssqltips.com/sqlservertip/3685/live-query-statistics-in-sql-server-2016/>

ChatGPT answer - C. An actual execution plan

Question #174

You have a version-8.0 Azure Database for MySQL database.

You need to identify which database queries consume the most resources.

Which tool should you use?

A) Query Store (Correct Answer)

- B) Metrics
- C) Query Performance Insight
- D) Alerts

Explanation

Correct Answer:

A

The Query Store feature in Azure Database for MySQL provides a way to track query performance over time. Query Store simplifies performance troubleshooting by helping you quickly find the longest running and most resource-intensive queries. Query Store automatically captures a history of queries and runtime statistics, and it retains them for your review. It separates data by time windows so that you can see database usage patterns. Data for all users, databases, and queries is stored in the mysql schema database in the Azure Database for MySQL instance.

Reference:

<https://docs.microsoft.com/en-us/azure/mysql/concepts-query-store>

Community Discussion

Answer given is correct. Query performance insight in Azure Database for MySQL only cover long run query and wait statistics. <https://docs.microsoft.com/en-us/azure/mysql/concepts-query-performance-insight>

my bad, answer A is correct as question relates to MYSQL. Query Performance Insight helps you to quickly identify what your longest running queries are, how they change over time, and what waits are affecting them.

my bad, answer A is correct as question relates to MYSQL. Query Performance Insight helps you to quickly identify what your longest running queries are, how they change over time, and what waits are affecting them.

Query Performance Insight is based upon Query Store. Maybe that's why the suggested answer is Query Store? I was torn between the two choices. I think this is one of the questions where there is more than one correct answer. Since QPI is based on QS perhaps that's the rationale?

why not Query Performance Insight? - Query Performance Insight helps you to quickly identify what your longest running queries are, how they change over time, and what waits are affecting them. <https://docs.microsoft.com/en-us/azure/mysql/concepts-query-performance-insight>

Question #175

HOTSPOT -

You have an Azure Data Factory instance named ADF1 and two Azure Synapse Analytics workspaces named WS1 and WS2.

ADF1 contains the following pipelines:

- ⇒ P1: Uses a copy activity to copy data from a nonpartitioned table in a dedicated SQL pool of WS1 to an Azure Data Lake Storage Gen2 account
- ⇒ P2: Uses a copy activity to copy data from text-delimited files in an Azure Data Lake Storage Gen2 account to a nonpartitioned table in a dedicated SQL pool of WS2

You need to configure P1 and P2 to maximize parallelism and performance.

Which dataset settings should you configure for the copy activity of each pipeline? To answer, select the appropriate options in the answer area.

Hot Area:

Answer Area

P1:

- Set the Copy method to Bulk insert.
- Set the Copy method to PolyBase.
- Set the Isolation level to Repeatable read.
- Set the Partition option to Dynamic range.

P2:

- Set the Copy method to Bulk insert.
- Set the Copy method to PolyBase.
- Set the Isolation level to Repeatable read.
- Set the Partition option to Dynamic range.

Explanation

Correct Answer:

Answer Area

P1:

- Set the Copy method to Bulk insert.
- Set the Copy method to PolyBase.
- Set the Isolation level to Repeatable read.
- Set the Partition option to Dynamic range.

P2:

- Set the Copy method to Bulk insert.
- Set the Copy method to PolyBase.
- Set the Isolation level to Repeatable read.
- Set the Partition option to Dynamic range.

P1: Set the Partition option to Dynamic Range.

The SQL Server connector in copy activity provides built-in data partitioning to copy data in parallel.

P2: Set the Copy method to PolyBase

Polybase is the most efficient way to move data into Azure Synapse Analytics. Use the staging blob feature to achieve high load speeds from all types of data stores, including Azure Blob storage and Data Lake Store. (Polybase supports Azure Blob storage and Azure Data Lake Store by default.)

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/connector-azure-sql-data-warehouse> <https://docs.microsoft.com/en-us/azure/data-factory/load-azure-sql-data-warehouse>

Community Discussion

This question is for DP-203 exam (Data Engineer).

Looks correct

DP-203

P1 : PolyBase P2 : Bulk Insert

For P1: Set the Copy method to PolyBase For P2: Set the Copy method to Bulk insert

Question #176

You have the following Azure Data Factory pipelines:

- ⇒ Ingest Data from System1

Ingest Data from System2 -

-
- ⇒ Populate Dimensions
- ⇒ Populate Facts

Ingest Data from System1 and Ingest Data from System2 have no dependencies. Populate Dimensions must execute after Ingest Data from System1 and Ingest Data from System2. Populate Facts must execute after the Populate Dimensions pipeline. All the pipelines must execute every eight hours.

What should you do to schedule the pipelines for execution?

- A) Add a schedule trigger to all four pipelines.
 - B) Add an event trigger to all four pipelines.
 - C) Create a parent pipeline that contains the four pipelines and use an event trigger.
 - D) Create a parent pipeline that contains the four pipelines and use a schedule trigger.**
- (Correct Answer)**

Explanation

Correct Answer:

D

Reference:

<https://www.mssqltips.com/sqlservertip/6137/azure-data-factory-control-flow-activities-overview/>

Community Discussion

DP-203: Data Engineering on Microsoft Azure

It should be event not schedule?.

Selected Answer: D

answer is correct

Question #177

You have an Azure Data Factory pipeline that performs an incremental load of source data to an Azure Data Lake Storage Gen2 account.

Data to be loaded is identified by a column named LastUpdatedDate in the source table.

You plan to execute the pipeline every four hours.

You need to ensure that the pipeline execution meets the following requirements:

- ⇒ Automatically retries the execution when the pipeline run fails due to concurrency or throttling limits.
- ⇒ Supports backfilling existing data in the table.

Which type of trigger should you use?

A) tumbling window (Correct Answer)

- B) on-demand
- C) event
- D) schedule

Explanation

Correct Answer:

A

The Tumbling window trigger supports backfill scenarios. Pipeline runs can be scheduled for windows in the past.

Incorrect Answers:

D: Schedule trigger does not support backfill scenarios. Pipeline runs can be executed only on time periods from the current time and the future.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipeline-execution-triggers>

Community Discussion

Not related to DP-300 exam.

DP-203

Its correct <https://docs.microsoft.com/en-us/azure/data-factory/how-to-create-tumbling-window-trigger?tabs=data-factory%2Cazure-powershell>

Selected Answer: A

Tumbling window is correct, link explains it all

its ok?

Question #178

You have an Azure Data Factory that contains 10 pipelines.

You need to label each pipeline with its main purpose of either ingest, transform, or load. The labels must be available for grouping and filtering when using the monitoring experience in Data Factory.

What should you add to each pipeline?

A) an annotation (Correct Answer)

- B) a resource tag
- C) a run group ID
- D) a user property
- E) a correlation ID

Explanation

Correct Answer:

A

Azure Data Factory annotations help you easily filter different Azure Data Factory objects based on a tag. You can define tags so you can see their performance or find errors faster.

Reference:

<https://www.techtalkcorner.com/monitor-azure-data-factory-annotations/>

Community Discussion

DP-203

Azure Data Factory is out of DP-300 exam.

Selected Answer: A

<https://www.techtalkcorner.com/monitor-azure-data-factory-annotations/>

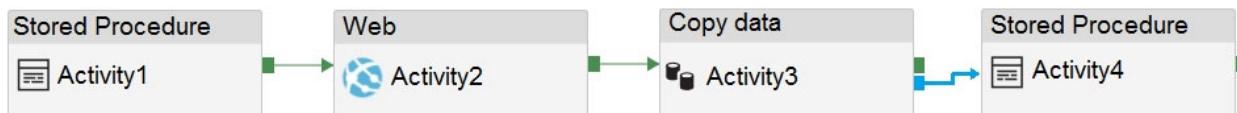
its ok?

Question #179

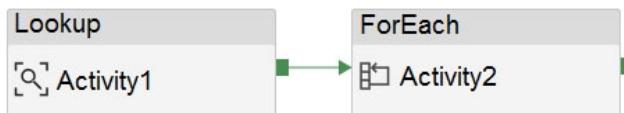
HOTSPOT -

You have an Azure data factory that has two pipelines named PipelineA and PipelineB.

PipelineA has four activities as shown in the following exhibit.



PipelineB has two activities as shown in the following exhibit.



You create an alert for the data factory that uses Failed pipeline runs metrics for both pipelines and all failure types. The metric has the following settings:

- ⇒ Operator: Greater than
- ⇒ Aggregation type: Total
- ⇒ Threshold value: 2
- ⇒ Aggregation granularity (Period): 5 minutes
- ⇒ Frequency of evaluation: Every 5 minutes

Data Factory monitoring records the failures shown in the following table.

Pipeline	Activity	Time
PipelineA	Activity1	31-Jan-2020 10:44:00
PipelineA	Activity3	31-Jan-2020 10:47:00
PipelineB	Activity1	31-Jan-2020 10:50:00

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

Statements	Yes	No
An alert notification was sent after the failure of Activity1 in PipelineA.	<input type="radio"/>	<input type="radio"/>
An alert notification was sent after the failure of Activity3 in PipelineA.	<input type="radio"/>	<input type="radio"/>
An alert notification was sent after the failure of Activity1 in PipelineB.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
An alert notification was sent after the failure of Activity1 in PipelineA.	<input type="radio"/>	<input checked="" type="radio"/>
An alert notification was sent after the failure of Activity3 in PipelineA.	<input type="radio"/>	<input checked="" type="radio"/>
An alert notification was sent after the failure of Activity1 in PipelineB.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No -

Just one failure within the 5-minute interval.

Box 2: No -

Just two failures within the 5-minute interval.

Box 3: No -

Just two failures within the 5-minute interval.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-monitor/alerts-metric-overview>

Community Discussion

Not related to DP-300 exam

DP-203

same here, do not understand the explanation

bouncer for me..

The answer No-No-No is correct. Every 5 minutes period you need at least 3 errors in order to trigger the alert.

Question #180

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 an Azure Data Lake Storage account that contains a staging zone.

You need to design a daily process to ingest incremental data from the staging zone, transform the data by executing an R script, and then insert the transformed data into a data warehouse in Azure Synapse Analytics.

Solution: You use an Azure Data Factory schedule trigger to execute a pipeline that executes mapping data flow, and then inserts the data into the data warehouse.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Correct solution: You use an Azure Data Factory schedule trigger to execute a pipeline that executes an Azure Databricks notebook, and then inserts the data into the data warehouse.

Reference:

<https://docs.microsoft.com/en-US/azure/data-factory/transform-data>

Community Discussion

DP-203

Not related to DP-300 exam.

looks correct

Question #181

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 an Azure Data Lake Storage account that contains a staging zone. You need to design a daily process to ingest incremental data from the staging zone, transform the data by executing an R script, and then insert the transformed data into a data warehouse in Azure Synapse Analytics.

Solution: You schedule an Azure Databricks job that executes an R notebook, and then inserts the data into the data warehouse.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Must use an Azure Data Factory, not an Azure Databricks job.

Correct solution: You use an Azure Data Factory schedule trigger to execute a pipeline that executes an Azure Databricks notebook, and then inserts the data into the data warehouse.

Reference:

<https://docs.microsoft.com/en-US/azure/data-factory/transform-data>

Community Discussion

DP-203

Yes, this solution meets the goal. By scheduling an Azure Databricks job that executes an R notebook, you can transform the data from the staging zone in your Azure Data Lake Storage account. Then, by inserting the data into the data warehouse in Azure Synapse Analytics, you can complete the daily process of ingesting incremental data. So, the answer is A. Yes.

A. Yes, this solution meets the goal of ingesting incremental data from the staging zone, transforming the data by executing an R script, and inserting the transformed data into a data warehouse in Azure Synapse Analytics using Azure Databricks. The scheduled Azure Databricks job can be used to execute the R notebook and insert the transformed data into the data warehouse.

Not related to DP-300 exam.

looks good, what do you think?

Question #182

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 an Azure Data Lake Storage account that contains a staging zone. You need to design a daily process to ingest incremental data from the staging zone, transform the data by executing an R script, and then insert the transformed data into a data warehouse in Azure Synapse Analytics.

Solution: You use an Azure Data Factory schedule trigger to execute a pipeline that executes an Azure Databricks notebook, and then inserts the data into the data warehouse.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

An Azure Data Factory can trigger a Databricks notebook.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/transform-data-using-databricks-notebook>

Community Discussion

DP-203

looks correct

Yes, this solution meets the goal. By using an Azure Data Factory schedule trigger to execute a pipeline that executes an Azure Databricks notebook, you can transform the data from the staging zone in your Azure Data Lake Storage account. Then, by inserting the data into the data warehouse in Azure Synapse Analytics, you can complete the daily process of ingesting incremental data. So, the answer is A. Yes.

Not related to DP-300 exam.

In the Question mentioned "Execute R script" not "executes an Azure Databricks notebook" The correct answer should be - B (No)

Question #183

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 an Azure Data Lake Storage account that contains a staging zone.

You need to design a daily process to ingest incremental data from the staging zone, transform the data by executing an R script, and then insert the transformed data into a data warehouse in Azure Synapse Analytics.

Solution: You use an Azure Data Factory schedule trigger to execute a pipeline that copies the data to a staging table in the data warehouse, and then uses a stored procedure to execute the R script.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Azure Synapse Analytics does not support R script.

Correct solution: You use an Azure Data Factory schedule trigger to execute a pipeline that executes an Azure Databricks notebook, and then inserts the data into the data warehouse.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/r-developers-guide>

Community Discussion

DP-203

This question is not for DBA (DP-300 exam).

Selected Answer: B

Insert to DWH comes after the Execution of R script, so the correct Answer should be (B).
No)

Selected Answer: B

Transform Data using R Script: The solution suggests using a stored procedure to execute the R script. While stored procedures can be used for certain types of processing, executing an R script might be more efficiently done using tools that natively support R, such as Azure Machine Learning Services or Azure Databricks.

B. No. The solution described does not fully meet the stated goal. While it includes a pipeline to copy data to a staging table in the data warehouse, it does not account for the incremental nature of the data. Additionally, using a stored procedure to execute the R script may not be the most efficient approach for transforming the data.

Question #184

DRAG DROP -

You have an Azure subscription that contains an Azure SQL managed instance named SQLMi1 and a SQL Agent job named Backupdb. Backupdb performs a daily backup of the databases hosted on SQLMi1.

You need to be notified by email if the job fails.

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.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Select and Place:

Actions	Answer Area
Create a SQL Server Agent alert.	
Create an operator.	
Create an extended event.	
Enable Database Mail.	
Add a failure notification to the job.	



Explanation

Correct Answer:

Actions

Create a SQL Server Agent alert.

Create an extended event.

Answer Area

Enable Database Mail.

Create an operator.

Add a failure notification to the job.

Step 1: Enable Database Mail -

If it isn't already enabled, first you would need to configure the Database Mail feature on SQL Managed Instance.

Box 2: Create an operator.

You can notify the operator that something happened with your SQL Agent jobs. An operator defines contact information for an individual responsible for the maintenance of one or more instances in SQL Managed Instance.

Box 3: Add a failure notification to the job,

You can then modify any SQL Agent job and assign operators that will be notified via email if the job completes, fails, or succeeds using SSMS or the following T-SQL script:

```
EXEC msdb.dbo.sp_update_job @job_name=N'Load data using SSIS',
@notify_level_email=3, -- Options are: 1 on succeed, 2 on failure, 3 on complete
@notify_email_operator_name=N'AzureSQLTeam';
```

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance>

Community Discussion

NOTE: More than one order of answer choices is correct.

NOTE: More than one order of answer choices is correct.

Correct. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql>

Not a fair question. An operator can be created before Database Mail is enabled or after, it doesn't matter which way around. As long as the Database Mail is enabled and an Operator created before adding a failure notification to a job.

looks correct

Question #185

DRAG DROP -

You have SQL Server on an Azure virtual machine.

You need to use Policy-Based Management in Microsoft SQL Server to identify stored procedures that do not comply with your naming conventions.

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:

Actions	Answer Area
Export a built-in policy.	
Create a custom policy based on a condition.	
Create a custom condition based on a built-in facet.	
View the policy history.	
Import a policy file.	
Run a policy evaluation.	



Explanation

Correct Answer:

Actions	Answer Area
Export a built-in policy.	Create a custom condition based on a built-in facet.
	Create a custom policy based on a condition.
View the policy history.	Run a policy evaluation.
Import a policy file.	

First create a condition, then a custom policy based on the condition, finally run a policy evaluation.

Reference:

<https://www.mssqltips.com/sqlservertip/2298/enforce-sql-server-database-naming-conventions-using-policy-based-management/>

Community Discussion

you should create the condition before the policy <https://www.red-gate.com/simple-talk/blogs/sql-server-policy-based-management-creating-a-custom-condition/>

you should create the condition before the policy <https://www.red-gate.com/simple-talk/blogs/sql-server-policy-based-management-creating-a-custom-condition/>

Correct Answer -> Create a custom condition based on a built-in facet -> Create a custom policy based on a condition -> Run a policy evaluation <https://www.mssqltips.com/sqlservertip/2298/enforce-sql-server-database-naming-conventions-using-policy-based-management/>

I think the correct answer is: B-C-F

Remember CP: firts the Condition, then the Policy.

Question #186

You have an Azure SQL managed instance named SQLMI1 that hosts 10 databases.

You need to implement alerts by using Azure Monitor. The solution must meet the following requirements:

- ⇒ Minimize costs.
- ⇒ Aggregate Intelligent Insights telemetry from each database.

What should you do?

A) From the Diagnostic settings of each database, select Send to Log Analytics. (Correct Answer)

- B) From the Diagnostic settings of each database, select Stream to an event hub.
- C) From the Diagnostic settings of SQLMI1, select Send to Log Analytics.
- D) From the Diagnostic settings of SQLMI1, select Stream to an event hub.

Explanation

Correct Answer:

A

Databases in Azure SQL Managed Instance

You can set up an instance database resource to collect the following diagnostic telemetry:

To enable streaming of diagnostic telemetry for an instance database, follow these steps:

1. Go to instance database resource within managed instance.
2. Select Diagnostics settings.
3. Select Turn on diagnostics if no previous settings exist, or select Edit setting to edit a previous setting.
4. Etc.
5. Repeat the above steps for each instance database you want to monitor.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?tabs=azure-portal#configure-the-streaming-export-of-diagnostic-telemetry>

Community Discussion

The answer is C. C. From the Diagnostic settings of SQLMI1, select Send to Log Analytics.

To implement alerts by using Azure Monitor, the best approach is to send diagnostic data

from the Azure SQL managed instance to Log Analytics. This approach meets both requirements, as it aggregates telemetry data from each database and minimizes costs. With Log Analytics, you can centralize and analyze diagnostic data from different sources, including Azure SQL Managed Instances, and set up alerts based on specific conditions. Option A would require setting up diagnostic settings for each database individually, which can be time-consuming and difficult to manage. Option B would require creating an event hub for each database, which could result in increased costs and complexity.

Yes, but: To configure streaming of diagnostic telemetry for managed instance and instance databases, you will need to separately configure each: Enable streaming of diagnostic telemetry for managed instance Enable streaming of diagnostic telemetry for each instance database The managed instance container has its own telemetry separate from each instance database's telemetry. So, we need to do both. In that case for me the best answer is A as is needed. <https://learn.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?tabs=azure-portal&view=azuresql#configure-the-streaming-export-of-diagnostic-telemetry>

Yes, but: To configure streaming of diagnostic telemetry for managed instance and instance databases, you will need to separately configure each: Enable streaming of diagnostic telemetry for managed instance Enable streaming of diagnostic telemetry for each instance database The managed instance container has its own telemetry separate from each instance database's telemetry. So, we need to do both. In that case for me the best answer is A as is needed. <https://learn.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?tabs=azure-portal&view=azuresql#configure-the-streaming-export-of-diagnostic-telemetry>

<https://docs.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?tabs=azure-portal&view=azuresql#configure-the-streaming-export-of-diagnostic-telemetry>

You can use the Diagnostics settings menu in the Azure portal to enable and configure streaming of diagnostic telemetry. Additionally, you can use PowerShell, the Azure CLI, the REST API, and Resource Manager templates to configure streaming of diagnostic telemetry. You can set the following destinations to stream the diagnostic telemetry: Azure Storage, Azure Event Hubs, and Azure Monitor logs. <https://learn.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?view=azuresql&tabs=azure-portal#configure-the-streaming-export-of-diagnostic-telemetry>

Question #187

You have an Azure SQL managed instance that hosts multiple databases. You need to configure alerts for each database based on the diagnostics telemetry of the database.

What should you use?

- A) Azure SQL Analytics alerts based on metrics
- B) SQL Health Check alerts based on diagnostics logs
- C) SQL Health Check alerts based on metrics

D) Azure SQL Analytics alerts based on diagnostics logs (Correct Answer)

Explanation

Correct Answer:

D

You can use Azure SQL Analytics for monitoring and alerting.

You can easily create alerts with the data coming from Azure SQL Database resources.

Here are some useful log queries that you can use with a log alert:

Example, HIGH CPU:

AzureMetrics -

```
| where ResourceProvider=="MICROSOFT.SQL"  
| where ResourceId contains "/DATABASES/"  
| where MetricName=="cpu_percent"  
| summarize AggregatedValue = max(Maximum) by bin(TimeGenerated, 5m)  
| render timechart
```

Note: Azure Monitor Logs is based on Azure Data Explorer, and log queries are written using the same Kusto query language (KQL).

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?tabs=azure-portal#configure-the-streaming-export-of-diagnostic-telemetry>

Community Discussion

D. Azure SQL Analytics alerts based on diagnostics logs

looks good, what do you think?

For the standard, event-based monitoring experience, select the following check boxes for database diagnostics log telemetry: SQLInsights, AutomaticTuning, QueryStoreRuntimeStatistics, QueryStoreWaitStatistics, Errors, DatabaseWaitStatistics, Timeouts, Blocks, and Deadlocks. <https://learn.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?view=azuresql&tabs=azure-portal>

Question #188

You have an Azure SQL managed instance.

You need to enable SQL Agent Job email notifications.

What should you do?

- A) Use the Agent XPs option.
- B) Enable the SQL Server Agent.
- C) Run the sp_configure command. (Correct Answer)**
- D) Run the sp_set_agent_properties command.

Explanation

Correct Answer:

C

You would need to enable Database email extended procedure using Database Mail XPs configuration option:

```
EXEC sp_configure 'show advanced options', 1;
```

```
GO -
```

```
RECONFIGURE;
```

```
GO -
```

```
EXEC sp_configure 'Database Mail XPs', 1;
```

```
GO -
```

```
RECONFIGURE -
```

```
GO -
```

Now you can test the configuration by sending emails using sp_send and

sp_notify_operator procedures.

Reference:

<https://techcommunity.microsoft.com/t5/azure-sql-blog/sending-emails-in-azure-sql-managed-instance/ba-p/386235>

Community Discussion

Selected Answer: C

In this page: <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql> they use sp_configure option.

Selected Answer: C

If it isn't already enabled, first you would need to configure the Database Mail feature on SQL Managed Instance: SQL Copy GO EXEC sp_configure 'show advanced options', 1; GO RECONFIGURE; GO EXEC sp_configure 'Database Mail XPs', 1; GO RECONFIGURE <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql>

ChatGPT doesn't provide the correct answer on this question. The Database Mail feature is independent of the SQL Server Agent and can be configured and used without enabling the SQL Server Agent. Usually we enable Database Mail feature first before enabling SQL Agent.

Selected Answer: B

B. Enable the SQL Server Agent. Explanation: To enable SQL Agent Job email notifications, you need to enable the SQL Server Agent. The SQL Server Agent is a component of the SQL Server Database Engine that can execute scheduled administrative tasks, such as executing SQL Agent jobs. SQL Agent jobs can be configured to send email notifications based on job status. To enable the SQL Server Agent, you can use SQL Server Management Studio or Transact-SQL commands. Once the SQL Server Agent is enabled, you can configure email notifications for SQL Agent jobs in the SQL Server Agent properties.

Selected Answer: C

in SQL MI, user doesnot have control to stop OR start SQL Agent and SQL agent in MI always is in running state so, next step in the process of job alert notification is to enable DB mail by running Sp_configure so, C is correct answer, configure DB mail using Exec Sp_configure

Question #189

You have four Azure subscriptions. Each subscription contains multiple Azure SQL databases.

You need to update the column and index statistics for the databases.

What should you use?

A) an Azure Automation runbook (Correct Answer)

- B) a SQL Agent job
- C) Azure SQL Analytics
- D) automatic tuning in Azure SQL Database

Explanation

Correct Answer:

A

You can create a runbook for index maintenance in an Azure SQL database.

Reference:

<https://www.sqlshack.com/automate-azure-sql-database-indexes-and-statistics-maintenance/>

Community Discussion

A. an Azure Automation runbook CORRECT
B. a SQL Agent job - AZURE SQL Database doesn't have SQL Agent, only elastic jobs.
C. Azure SQL Analytics - Not related with statistics
D. automatic tuning in Azure SQL Database - Not related with statistics, only execution plan and indexes.

thanks

thanks

Selected Answer: A

Automation runbook is correct answer

<https://www.sqlshack.com/azure-sql-index-tables-using-azure-automation/>

Question #190

DRAG DROP -

You have SQL Server on an Azure virtual machine named SQL1.

SQL1 has an agent job to back up all databases.

You add a user named dbadmin1 as a SQL Server Agent operator.

You need to ensure that dbadmin1 receives an email alert if a job fails.

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:

Actions	Answer Area
Create a job alert	
Create a job notification	
Enable Database Mail	
Enable the email settings for the SQL Server Agent	
Create a job target	

Explanation

Correct Answer:

Actions	Answer Area
Create a job alert	Enable Database Mail
Create a job notification	Enable the email settings for the SQL Server Agent
Enable Database Mail	 Create a job notification
Enable the email settings for the SQL Server Agent	
Create a job target	

Step 1: Enable Database Mail -

Database Mail must be enabled.

Step 2: Enable the email settings for the SQL Server Agent.

To send a notification in response to an alert, you must first configure SQL Server Agent to send mail.

Step 3: Create a job notification

Example:

-- adds an e-mail notification for the specified alert (Test Alert)

-- This example assumes that Test Alert already exists

-- and that François Ajenstat is a valid operator name.

USE msdb ;

GO -

```
EXEC dbo.sp_add_notification -
```

```
@alert_name = N'Test Alert',
```

```
@operator_name = N'François Ajenstat',
```

```
@notification_method = 1 ;
```

GO -

Reference:

<https://docs.microsoft.com/en-us/sql/ssms/agent/notify-an-operator-of-job-status>

<https://docs.microsoft.com/en-us/sql/ssms/agent/assign-alerts-to-an-operator>

Community Discussion

C - D -B

the answer is C - D -B, to send an email for a failed job you need: 1) one operator , 2) database mail feature on, 3) sql job set to use the email profile created in 2) , and last a notification sending the email to the operator created in 1), by the way in the options there is no choice for one operator, so C - D - B.

CDB is the correct order.

CDB is the correct order.

1 Enable mail 2 Enable mail setting in SQL Agent 3 Enable mail in notification tab in a job

Question #191

DRAG DROP -

You need to apply 20 built-in Azure Policy definitions to all new and existing Azure SQL Database deployments in an Azure subscription. The solution must minimize administrative effort.

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:

Actions	Answer Area
Duplicate Azure Policy definitions	
Run Azure Policy remediation tasks	
Create an Azure Blueprints assignment	>
Create an Azure Policy initiative	<
Create an Azure Policy initiative assignment	^ v

Explanation

Correct Answer:

Actions	Answer Area
Duplicate Azure Policy definitions	Create an Azure Policy initiative Create an Azure Policy initiative assignment
Create an Azure Blueprints assignment	> <
	Run Azure Policy remediation tasks

Step 1: Create an Azure Policy Initiative

The first step in enforcing compliance with Azure Policy is to assign a policy definition. A

policy definition defines under what condition a policy is enforced and what effect to take.

With an initiative definition, you can group several policy definitions to achieve one overarching goal. An initiative evaluates resources within scope of the assignment for compliance to the included policies.

Step 2: Create an Azure Policy Initiative assignment

Assign the initiative definition you created in the previous step.

Step 3: Run Azure Policy remediation tasks

To apply the Policy Initiative to the existing SQL databases.

Reference:

<https://docs.microsoft.com/en-us/azure/governance/policy/tutorials/create-and-manage>

Community Discussion

correct.

correct

Question #192

You have an Azure SQL Database managed instance named SQLMI1. A Microsoft SQL Server Agent job runs on SQLMI1.

You need to ensure that an automatic email notification is sent once the job completes.

What should you include in the solution?

- A) From SQL Server Configuration Manager (SSCM), enable SQL Server Agent
- B) From SQL Server Management Studio (SSMS), run sp_set_sqlagent_properties
- C) From SQL Server Management Studio (SSMS), create a Database Mail profile (Correct Answer)**
- D) From the Azure portal, create an Azure Monitor action group that has an Email/SMS/Push/Voice action

Explanation

Correct Answer:

C

To send a notification in response to an alert, you must first configure SQL Server Agent to send mail.

Using SQL Server Management Studio; to configure SQL Server Agent to use Database Mail:

1. In Object Explorer, expand a SQL Server instance.
2. Right-click SQL Server Agent, and then click Properties.
3. Click Alert System.
4. Select Enable Mail Profile.
5. In the Mail system list, select Database Mail.
6. In the Mail profile list, select a mail profile for Database Mail.
7. Restart SQL Server Agent.

Note: Prerequisites include:

- ⇒ Enable Database Mail.
- ⇒ Create a Database Mail account for the SQL Server Agent service account to use.
- ⇒ Create a Database Mail profile for the SQL Server Agent service account to use and add the user to the DatabaseMailUserRole in the msdb database.
- ⇒ Set the profile as the default profile for the msdb database.

Reference:

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

Community Discussion

Answer is correct. You have to create Database Mail Profile. Luke97 is referring to the profile name. -- Create a Database Mail profile EXECUTE
msdb.dbo.sysmail_add_profile_sp @profile_name =
'AzureManagedInstance_dbmail_profile', @description = '...' ; Reference - <https://techcommunity.microsoft.com/t5/azure-sql/sending-emails-in-azure-sql-managed-instance/ba-p/386235>

If you want to send e-mail using SQL Agent jobs, there should be a profile that must be called 'AzureManagedInstance_dbmail_profile'. Otherwise, Managed Instance will be unable to send emails via SQL Agent.

Reference: <https://techcommunity.microsoft.com/t5/azure-sql/sending-emails-in-azure-sql-managed-instance/ba-p/386235> "The important thing is that you can use any name for the DbMail profile (and you can have several db Mail profiles) for Db Mail procedures. However, if you want to send e-mail using SQL Agent jobs, there should be a profile that must be called 'AzureManagedInstance_dbmail_profile'. Otherwise, Managed Instance will be unable to send emails via SQL Agent. If you are using one profile in your instance and

you want to use it both for classic emails and SQL Agent, rename the profile to 'AzureManagedInstance_dbmail_profile' so it can be used on both places."

Reference: <https://techcommunity.microsoft.com/t5/azure-sql/sending-emails-in-azure-sql-managed-instance/ba-p/386235> "The important thing is that you can use any name for the DbMail profile (and you can have several db Mail profiles) for Db Mail procedures. However, if you want to send e-mail using SQL Agent jobs, there should be a profile that must be called 'AzureManagedInstance_dbmail_profile'. Otherwise, Managed Instance will be unable to send emails via SQL Agent. If you are using one profile in your instance and you want to use it both for classic emails and SQL Agent, rename the profile to 'AzureManagedInstance_dbmail_profile' so it can be used on both places."

Selected Answer: D

C, creating a Database Mail profile, is also not applicable to Azure SQL Database Managed Instance. Database Mail is not supported in Azure SQL Database Managed Instance, so you cannot use it to send email notifications.

Question #193

You need to trigger an Azure Data Factory pipeline when a file arrives in an Azure Data Lake Storage Gen2 container.

Which resource provider should you enable?

- A) Microsoft.EventHub
- B) Microsoft.EventGrid (Correct Answer)**
- C) Microsoft.Sql
- D) Microsoft.Automation

Explanation

Correct Answer:

B

Event-driven architecture (EDA) is a common data integration pattern that involves production, detection, consumption, and reaction to events. Data integration scenarios often require Data Factory customers to trigger pipelines based on events happening in storage account, such as the arrival or deletion of a file in Azure Blob Storage account. Data Factory natively integrates with Azure Event Grid, which lets you trigger pipelines on such events.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/how-to-create-event-trigger>

Community Discussion

This question is for DP-203 exam (Data Engineering on Microsoft Azure).

DP-203

Selected Answer: B

Data Factory natively integrates with Azure Event Grid, which lets you trigger pipelines on such events.

looks correct

Question #194

You plan to move two 100-GB databases to Azure.

You need to dynamically scale resources consumption based on workloads. The solution must minimize downtime during scaling operations.

What should you use?

A) An Azure SQL Database elastic pool (Correct Answer)

- B) SQL Server on Azure virtual machines
- C) an Azure SQL Database managed instance
- D) Azure SQL databases

Explanation

Correct Answer:

A

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.

Reference:

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

Community Discussion

Two databases with a size of 100GB, not 100 TB. Hyperscale isn't needed.

Option is correct because he is asking for Two Databases, and to reduce the resource the best is to use an elastic pool with a certain number of eDTUs that are shared among multiple databases in the pool Note: Dynamic scalability is different from autoscale. Autoscale is when a service scales automatically based on criteria, whereas dynamic scalability allows for manual scaling with a minimal downtime.

I really dislike questions like this. You'd almost always choose Azure SQL over MI unless there's a compat reason. Putting 2 databases in an elastic pool is typically counterproductive cost-wise, but since the question is only about downtime, both A and D have similar latency in scaling. SQL MI can scale also, but not as fast as Azure SQL DB. Finally, Azure SQL DB using serverless (no elastic pool) can be considered since we don't know the workload. Staying within the same service level (standard to standard or gp to gp) will be the fastest for 100GB databases, as data is not copied and detached/attached. Moving between tiers is quite a bit slower (gp -> bc). Here, hyperscale offers the all around fastest rescale time, so even though you don't *need* hyperscale for size, the only thing being asked is, "which scales fastest?" Since hyperscale is a service tier of Azure SQL DB, I think D is correct as it offers the most options. Refer to latency chart: <https://docs.microsoft.com/en-us/azure/azure-sql/database/elastic-pool-scale>

For me it's A, since they stated two databases

Selected Answer: A

Correct answer A

Question #195

You have 10 Azure virtual machines that have SQL Server installed. You need to implement a backup strategy to ensure that you can restore specific databases to other SQL Server instances. The solution must provide centralized management of the backups. What should you include in the backup strategy?

- A) Automated Backup in the SQL virtual machine settings
- B) Azure Backup (Correct Answer)**
- C) Azure Site Recovery

D) SQL Server Agent jobs

Explanation

Correct Answer:

B

Azure Backup provides an Enterprise class backup capability for SQL Server on Azure VMs. All backups are stored and managed in a Recovery Services vault.

There are several advantages that this solution provides, especially for Enterprises.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/backup-restore#azbackup>

Community Discussion

B is correct. With Azure Backup you can centrally manage backups for multiple servers and thousands of databases. but Automated backup allows you to schedule regular backups for all databases on a SQL Server VM. <https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/backup-restore#azbackup>

Selected Answer: B

B is correct

Answer is Correct: Automated Backup only support a SQL Server VM but Azure Backup provides an Enterprise class backup capability for SQL Server on Azure VMs. With this service, you can centrally manage backups for multiple servers and thousands of databases. In the question, there are 10 Azure SQL Server VM.

Answer is Correct: Automated Backup only support a SQL Server VM but Azure Backup provides an Enterprise class backup capability for SQL Server on Azure VMs. With this service, you can centrally manage backups for multiple servers and thousands of databases. In the question, there are 10 Azure SQL Server VM.

Given Answer is correct B, catch in the question is "ensure that you can restore specific databases to other SQL Server instances"

Question #196

You need to recommend an availability strategy for an Azure SQL database. The strategy must meet the following requirements:

- ⇒ Support failovers that do not require client applications to change their connection strings.
- ⇒ Replicate the database to a secondary Azure region.
- ⇒ Support failover to the secondary region.

What should you include in the recommendation?

A) failover groups (Correct Answer)

- B) transactional replication
- C) Availability Zones
- D) geo-replication

Explanation

Correct Answer:

A

The auto-failover groups feature allows you to manage the replication and failover of some or all databases on a logical server to another region.

Incorrect Answers:

Not C: Availability Zones are unique physical locations within a region. Each zone is made up of one or more datacenters equipped with independent power, cooling, and networking.

Not D: Geo-replication failovers require client applications to change their connection strings.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-overview> <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview>

Community Discussion

The answer should be A. Failover groups don't require changes on the connection string. Geo replica does.

Yes, Geo-replication requires a change of connection string, can't be the right answer

Ans is A The link clearly show that <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview> "Update connection strings in your application accordingly."

Selected Answer: A

It should be Failover groups. Geo replica requires CS change.

The answer is A. There is no question, just do it. 100%. Reason: Geo-Replication requires Connection String change. Failover Groups do not.

Question #197

DRAG DROP -

You have SQL Server on an Azure virtual machine that contains a database named DB1. DB1 is 30 TB and has a 1-GB daily rate of change.

You back up the database by using a Microsoft SQL Server Agent job that runs Transact-SQL commands. You perform a weekly full backup on Sunday, daily differential backups at 01:00 in the morning, and transaction log backups every five minutes.

The database fails on Wednesday at 10:00 in the morning.

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

Select and Place:

Actions	Answer Area
Monday, Tuesday, and then Wednesday differential backups	> <
Wednesday, Tuesday, and then Monday log backups	^ ▼
full backup	> <
Monday, Tuesday, and then Wednesday log backups	^ ▼
Wednesday, Tuesday, and then Monday differential backups	> <
Wednesday log backups	^ ▼
Wednesday differential backup	> <

Explanation

Correct Answer:

Actions	Answer Area
Monday, Tuesday, and then Wednesday differential backups	full backup
Wednesday, Tuesday, and then Monday log backups	Wednesday differential backup
full backup	Wednesday log backups
Monday, Tuesday, and then Wednesday log backups	 
Wednesday, Tuesday, and then Monday differential backups	
Wednesday log backups	
Wednesday differential backup	

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

Community Discussion

Answer is correct.

Full -> Differential -> Log

Correct Answer as A differential backup is based on the most recent, previous full data backup. <https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/differential-backups-sql-server?view=sql-server-ver15>

correct

Answer is correct

Question #198

You are building a database backup solution for a SQL Server database hosted on an Azure virtual machine.

In the event of an Azure regional outage, you need to be able to restore the database backups. The solution must minimize costs.

Which type of storage accounts should you use for the backups?

- A) locally-redundant storage (LRS)
- B) read-access geo-redundant storage (RA-GRS)
- C) zone-redundant storage (ZRS)
- D) geo-redundant storage (GRS) (Correct Answer)**

Explanation

Correct Answer:

D

Geo-redundant storage (GRS) is cheaper compared to read-access geo-redundant storage (RA-GRS).

Geo-redundant storage (with GRS or GZRS) replicates your data to another physical location in the secondary region to protect against regional outages. Data is available to be read only if the customer or Microsoft initiates a failover from the primary to secondary region.

Incorrect Answers:

A: Locally redundant storage (LRS) copies your data synchronously three times within a single physical location in the primary region. LRS is the least expensive replication option, but is not recommended for applications requiring high availability.

B: RA-GRS is more expensive than GRS.

Note: Geo-redundant storage (with GRS or GZRS) replicates your data to another physical location in the secondary region to protect against regional outages.

However, that data is available to be read only if the customer or Microsoft initiates a failover from the primary to secondary region. When you enable read access to the secondary region, your data is available to be read if the primary region becomes unavailable. For read access to the secondary region, enable read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS).

C: Zone-redundant storage (ZRS) copies your data synchronously across three Azure availability zones in the primary region.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy>

Community Discussion

According to Microsoft, "Geo-redundant storage (with GRS or GZRS) replicates your data to another physical location in the secondary region to protect against regional outages. However, that data is available to be read only if the customer or Microsoft initiates a failover from the primary to secondary region. When you enable read access to the secondary region, your data is available to be read at all times, including in a situation where the primary region becomes unavailable. For read access to the secondary region, enable read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS)." So, if Primary Region is unavailable and MS did not failover, then you can only restore Backup on secondary region if it is RA-GRS.

The difference between GRS and RA-GRS: GRS - After failover, the read-only is available. If no failover, it can not be readable. RA-RGS - is always enable and read-only. If GRS is cheaper, D is the right answer.

You can do the failover yourself on a GRS account, so technically GRS minimizes costs. That said, if you have a solution where all this DR is required, you'd almost certainly want RA-GRS for testing/verification. The cost difference is minimal (yes, the costs add up if you have tens of TBs of backups, but would represent only a very tiny percentage of the costs needed to run an app/db of this size). So again technically GRS but realistically you would select RA-GRS.

You can do the failover yourself on a GRS account, so technically GRS minimizes costs. That said, if you have a solution where all this DR is required, you'd almost certainly want RA-GRS for testing/verification. The cost difference is minimal (yes, the costs add up if you have tens of TBs of backups, but would represent only a very tiny percentage of the costs needed to run an app/db of this size). So again technically GRS but realistically you would select RA-GRS.

Answer is correct: B. <https://medium.com/@aslanim/azure-accessing-your-sql-server-backups-in-your-ra-grs-account-17e0c7457146>

Question #199

You have SQL Server on Azure virtual machines in an availability group.

You have a database named DB1 that is NOT in the availability group.

You create a full database backup of DB1.

You need to add DB1 to the availability group.

Which restore option should you use on the secondary replica?

A) Restore with Recovery

B) Restore with Norecovery (Correct Answer)

C) Restore with Standby

Explanation

Correct Answer:

B

Prepare a secondary database for an Always On availability group requires two steps:

1. Restore a recent database backup of the primary database and subsequent log backups onto each server instance that hosts the secondary replica, using

RESTORE WITH NORECOVERY -

2. Join the restored database to the availability group.

Reference:

<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/manually-prepare-a-secondary-database-for-an-availability-group-sql-server>

Community Discussion

correct, here an example generated by the wizard USE [master] GO ALTER AVAILABILITY GROUP [AvailabilityGroup1] ADD DATABASE [Base3]; GO :Connect WIN-MSSQL2\INSTANCE1 BACKUP DATABASE [Base3] TO DISK = N'\\WIN-MSSQL2\AG-InitialBackup\Base3.bak' WITH COPY_ONLY, FORMAT, INIT, SKIP, REWIND, NOUNLOAD, COMPRESSION, STATS = 5 GO :Connect WIN-MSSQL3\INSTANCE2 RESTORE DATABASE [Base3] FROM DISK = N'\\WIN-MSSQL2\AG-InitialBackup\Base3.bak' WITH NORECOVERY, NOUNLOAD, STATS = 5 GO :Connect WIN-MSSQL2\INSTANCE1 BACKUP LOG [Base3] TO DISK = N'\\WIN-MSSQL2\AG-InitialBackup\Base3_20151015122656.trn' WITH NOFORMAT, NOINIT, NOSKIP, REWIND, NOUNLOAD, COMPRESSION, STATS = 5 GO :Connect WIN-MSSQL3\INSTANCE2 RESTORE LOG [Base3] FROM DISK = N'\\WIN-MSSQL2\AG-InitialBackup\Base3_20151015122656.trn' WITH NORECOVERY, NOUNLOAD, STATS = 5 GO GO

Selected Answer: B

B is correct answer

Question #200

You are planning disaster recovery for the failover group of an Azure SQL Database managed instance.

Your company's SLA requires that the database in the failover group become available as quickly as possible if a major outage occurs.

You set the Read/Write failover policy to Automatic.

What are two results of the configuration? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A) In the event of a datacenter or Azure regional outage, the databases will fail over automatically. (Correct Answer)

- B) In the event of an outage, the databases in the primary instance will fail over immediately.
- C) In the event of an outage, you can selectively fail over individual databases.
- D) In the event of an outage, you can set a different grace period to fail over each database.

E) In the event of an outage, the minimum delay for the databases to fail over in the primary instance will be one hour. (Correct Answer)

Explanation

Correct Answer:

AE

A: Auto-failover groups allow you to manage replication and failover of a group of databases on a server or all databases in a managed instance to another region.
E: Because verification of the scale of the outage and how quickly it can be mitigated involves human actions by the operations team, the grace period cannot be set below one hour. This limitation applies to all databases in the failover group regardless of their data synchronization state.

Incorrect Answers:

C: individual SQL Managed Instance databases cannot be added to or removed from a failover group.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-overview>

Community Discussion

answer is right, there is grace period of an hour in geo redundancy

Not immediately. The failover would happen after "Grace Period" (min 60 mins).

Not immediately. The failover would happen after "Grace Period" (min 60 mins).

A and D.

Given answer is correct

Question #201

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

A) Azure SQL Database Premium (Correct Answer)

- B) Azure SQL Database serverless
- C) Azure SQL Database Basic
- D) Azure SQL Database Standard

Explanation

Correct Answer:

A

By default, the cluster of nodes for the premium availability model is created in the same datacenter. With the introduction of Azure Availability Zones, SQL Database can place different replicas of the Business Critical database to different availability zones in the same region. To eliminate a single point of failure, the control ring is also duplicated across multiple zones as three gateway rings (GW). The routing to a specific gateway ring is controlled by Azure Traffic Manager (ATM). Because the zone redundant configuration in the Premium or Business Critical service tiers does not create additional database redundancy, you can enable it at no extra cost. By selecting a zone redundant configuration, you can make your Premium or

Business Critical databases resilient to a much larger set of failures, including catastrophic datacenter outages, without any changes to the application logic. You can also convert any existing Premium or Business Critical databases or pools to the zone redundant configuration.

Incorrect Answers:

C. This feature is not available in SQL Managed Instance.

Note:

There are several versions of this question with different incorrect answer options. Other incorrect answers you may see on the exam include:

- ⇒ Azure SQL Database Hyperscale
- ⇒ Azure SQL Database Basic
- ⇒ Azure SQL Database managed instance General Purpose

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla>

Community Discussion

Selected Answer: D

Correct answer is D: o minimize costs, you can choose the Standard pricing tier for both the primary and secondary replicas. This tier provides geo-replication support for a single secondary replica and is designed for applications with moderate usage patterns.

Yes, the answer is D: Option A: Azure SQL Database Premium supports geo-replication but is the most expensive pricing tier. Option B: Azure SQL Database serverless is a cost-effective option but does not support geo-replication. Option C: Azure SQL Database Basic does not support geo-replication. Option D: Azure SQL Database Standard supports geo-replication and is a cost-effective option. Therefore, the recommended deployment option and pricing tier for this scenario is Azure SQL Database Standard.

Yes, the answer is D: Option A: Azure SQL Database Premium supports geo-replication but is the most expensive pricing tier. Option B: Azure SQL Database serverless is a cost-effective option but does not support geo-replication. Option C: Azure SQL Database Basic does not support geo-replication. Option D: Azure SQL Database Standard supports geo-replication and is a cost-effective option. Therefore, the recommended deployment option and pricing tier for this scenario is Azure SQL Database Standard.

No need of Geo-replication as the question is about just a datacenter outage not a zone-outage. In Standard put the DB into an Availability Group. More administrative effort but cheaper solution I vote for D

No need of Geo-replication as the question is about just a datacenter outage not a zone-outage. In Standard put the DB into an Availability Group. More administrative effort but cheaper solution I vote for D

Question #202

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 an Azure SQL database named Sales.

You need to implement disaster recovery for Sales to meet the following requirements:

- ⇒ During normal operations, provide at least two readable copies of Sales.
- ⇒ Ensure that Sales remains available if a datacenter fails.

Solution: You deploy an Azure SQL database that uses the General Purpose service tier and geo-replication.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Instead deploy an Azure SQL database that uses the Business Critical service tier and Availability Zones.

Note: Premium and Business Critical service tiers leverage the Premium availability model, which integrates compute resources (sqlservr.exe process) and storage (locally attached SSD) on a single node. High availability is achieved by replicating both compute and storage to additional nodes creating a three to four-node cluster.

By default, the cluster of nodes for the premium availability model is created in the same datacenter. With the introduction of Azure Availability Zones, SQL

Database can place different replicas of the Business Critical database to different availability zones in the same region. To eliminate a single point of failure, the control ring is also duplicated across multiple zones as three gateway rings (GW).

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla>

Community Discussion

Looks like the answer here should be YES. While the failover isn't automatic, geo-replication does meet the stated requirements: Up to four secondaries are supported in the same or different regions, and the secondaries can also be used for read-only access queries. Ref: <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview>

Measure Up answer to this is NO.

The question and the provided answer might be outdated so here is an updated one: A - Yes. General Purpose allows for Failover without manual intervention ... As we discussed in an earlier module in this learning path, all of Azure SQL is built on Azure Service Fabric, which serves as the Azure backbone. If Azure Service Fabric determines that a failover needs to occur, the failover will be similar to that of a failover cluster instance (FCI). The service fabric will look for a node with spare capacity and spin up a new SQL Server instance. The database files will then be attached, recovery will be run, and gateways will be updated to point applications to the new node. No virtual network or listener or updates are required. This capability is built in. <https://docs.microsoft.com/en-us/learn/modules/azure-sql-high-availability/4-high-availability-architecture> Active geo-replication is an Azure SQL Database feature that allows you to create readable secondary databases of individual databases on a server in the same or different data center (region). <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview>

B is correct

B is correct

Question #203

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 an Azure SQL database named Sales.

You need to implement disaster recovery for Sales to meet the following requirements:

- ⇒ During normal operations, provide at least two readable copies of Sales.
- ⇒ Ensure that Sales remains available if a datacenter fails.

Solution: You deploy an Azure SQL database that uses the Business Critical service tier and Availability Zones.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

Premium and Business Critical service tiers leverage the Premium availability model, which integrates compute resources (sqlservr.exe process) and storage (locally attached SSD) on a single node. High availability is achieved by replicating both compute and storage to additional nodes creating a three to four-node cluster.

By default, the cluster of nodes for the premium availability model is created in the same datacenter. With the introduction of Azure Availability Zones, SQL Database can place different replicas of the Business Critical database to different availability zones in the same region. To eliminate a single point of failure, the control ring is also duplicated across multiple zones as three gateway rings (GW).

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla>

Community Discussion

Answer seems true

your explaination is not right

your explaination is not right

Ensure that Sales remains available if a datacenter fails. > true with availability zones because replicas are located in distant regions not the same datacenter

does not meet "During normal operations, provide at least two readable copies of Sales." so NO

Question #204

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 an Azure SQL database named Sales.

You need to implement disaster recovery for Sales to meet the following requirements:

- ⇒ During normal operations, provide at least two readable copies of Sales.
- ⇒ Ensure that Sales remains available if a datacenter fails.

Solution: You deploy an Azure SQL database that uses the General Purpose service tier and failover groups.

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer:

B

Instead deploy an Azure SQL database that uses the Business Critical service tier and

Availability Zones.

Note: Premium and Business Critical service tiers leverage the Premium availability model, which integrates compute resources (sqlservr.exe process) and storage (locally attached SSD) on a single node. High availability is achieved by replicating both compute and storage to additional nodes creating a three to four- node cluster.

By default, the cluster of nodes for the premium availability model is created in the same datacenter. With the introduction of Azure Availability Zones, SQL Database can place different replicas of the Business Critical database to different availability zones in the same region. To eliminate a single point of failure, the control ring is also duplicated across multiple zones as three gateway rings (GW).

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla>

Community Discussion

<https://docs.microsoft.com/en-us/learn/modules/azure-sql-high-availability/7-higher-availability-options> you cannot have multiples replicas with auto failover and we need 2 here so NO

Answer is correct; though In the Premium and Business Critical service tiers, applications could have "read-only replicas" at no extra cost, but "read-only replicas " is disabled at cannot be enabled in Basic, Standard, or General Purpose service tiers ; <https://docs.microsoft.com/en-us/azure/azure-sql/database/read-scale-out>

Answer: Yes Reason: Auto-Failover group if created for a General Purpose service tier will create a replica in another region which will provide protection against datacenter disaster and Auto-failover group also supports read-scale so we get two read replica (primary replica which is read/write and Auto-failover replica in another region which is read-only replica).

Right, but the secondary is readable. So, the primary plus secondary would be two readable copies /during normal operations./

Did further search, general purpose tier can have 0 - 4 Read-only replicas using geo-replication which is auto configured by failover group, so the answer should be "YES"

Question #205

You plan to move two 100-GB databases to Azure.

You need to dynamically scale resources consumption based on workloads. The solution must minimize downtime during scaling operations.

What should you use?

A) two Azure SQL Databases in an elastic pool (Correct Answer)

- B) two databases hosted in SQL Server on an Azure virtual machine
- C) two databases in an Azure SQL Managed instance
- D) two single Azure SQL databases

Explanation

Correct Answer:

A

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.

Reference:

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

Community Discussion

Elastic pool distributes workload across databases in a cluster, seems right

Question #206

You have an on-premises app named App1 that stores data in an on-premises Microsoft SQL Server 2019 database named DB1.

You plan to deploy additional instances of App1 to separate Azure regions. Each region will have a separate instance of App1 and DB1. The separate instances of DB1 will sync by using Azure SQL Data Sync.

You need to recommend a database service for the deployment. The solution must minimize administrative effort.

What should you include in the recommendation?

- A) Azure SQL Managed instance
- B) Azure SQL Database single database (Correct Answer)**
- C) Azure Database for PostgreSQL
- D) SQL Server on Azure virtual machines

Explanation

Correct Answer:

B

Azure SQL Database single database supports Data Sync.

Incorrect Answers:

A: Azure SQL Managed instance does not support Data Sync.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/features-comparison>

Community Discussion

The given answer seems to be correct as the Azure Database currently only supports azure data sync: <https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-data-sync-data-sql-server-sql-database>

Selected Answer: B

Azure SQL Database single database supports Data Sync. Azure SQL Data Sync does not support Azure SQL Managed Instance at this time.

Its ok SQL Data Sync is a service built on Azure SQL Database that lets you synchronize the data you select bi-directionally across multiple databases, both on-premises and in

the cloud. <https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-data-sync-data-sql-server-sql-database>

Question #207

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 two Azure SQL Database servers named Server1 and Server2. Each server contains an Azure SQL database named Database1.

You need to restore Database1 from Server1 to Server2. The solution must replace the existing Database1 on Server2.

Solution: From Microsoft SQL Server Management Studio (SSMS), you rename Database1 on Server2 as Database2. From the Azure portal, you create a new database on Server2 by restoring the backup of Database1 from Server1, and then you delete Database2.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

This procedure is necessary and correct, as there is no option in Azure SQL Database to directly restore a database.

Reference:

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

Community Discussion

It's "Yes": you can rename an Azure SQL Database on SSMS and then run the procedure.
The explanation is wrong: there is no "replace" option on Azure SQL

Answer is correct because you can NOT restore a backup from another server in Azure Database. But you can create a new DB by copying a backup from another server: -- Execute on the master database of the target server (server2) to start copying from Server1 to Server2
CREATE DATABASE Database2 AS COPY OF server1.Database1;

Answer is correct, It should be "NO" As asked in question, The solution must replace the existing Database1 on Server2. And in Solution: From Microsoft SQL Server Management Studio (SSMS), you rename Database1 on Server2 as Database2. From the Azure portal, you create a new database on Server2 by restoring the backup of Database1 from Server1, and then you delete Database2. When you perform the restore with replace, it will replace or overwrite the physical files as well but here by renaming database name will not change the physical files name.

You are right. <https://azure.microsoft.com/en-gb/updates/azure-sql-database-managed-instance-database-rename-is-supported/>

You are right. <https://azure.microsoft.com/en-gb/updates/azure-sql-database-managed-instance-database-rename-is-supported/>

Question #208

You have an Azure subscription that uses a domain named contoso.com. You have two Azure VMs named DBServer1 and DBServer2. Each of them hosts a default SQL Server instance. DBServer1 is in the East US Azure region and contains a database named DatabaseA. DBServer2 is in the West US Azure region.

DBServer1 has a high volume of data changes and low latency requirements for data writes.

You need to configure a new availability group for DatabaseA. The secondary replica will reside on DBServer2.

What should you do?

- A) Configure the primary endpoint as TCP://DBServer1.contoso.com:445, configure the secondary endpoint as TCP://DBServer2.contoso.com:445, and set the availability mode to Asynchronous.
- B) Configure the primary endpoint as TCP://DBServer1.contoso.com:445, configure the secondary endpoint as TCP://DBServer2.contoso.com:445, and set the availability mode to Synchronous.

C) Configure the primary endpoint as TCP://DBServer1.contoso.com:5022, configure the secondary endpoint as TCP://DBServer2.contoso.com:5022, and set the availability mode to Asynchronous. (Correct Answer)

D) Configure the primary endpoint as TCP://DBServer1.contoso.com:5022, configure the secondary endpoint as TCP://DBServer2.contoso.com:5022, and set the availability mode to Synchronous.

Explanation

Correct Answer:

C

Use TCP port 5022, and use asynchronous mode for low latency.

Reference:

<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/availability-modes-always-on-availability-groups?view=sql-server-ver15>

Community Discussion

Selected Answer: C

Asynchronous is low latency

The answer is correct, low latency = asynchronous TCP port = 5022 <https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/configure-distributed-availability-groups?view=sql-server-ver15&tabs=automatic>

5502 applies to distributed AGs. This use case seems to be a single AG for database A.

looks good, what do you think?

<https://hub.packtpub.com/firewall-ports-you-need-to-open-for-availability-groups-from-blog-posts-sqlservercentral/> 445 is for the WSFC fileshare witness.

Question #209

You have an on-premises multi-tier application named App1 that includes a web tier, an application tier, and a Microsoft SQL Server tier. All the tiers run on Hyper-V virtual machines.

Your new disaster recovery plan requires that all business-critical applications can be recovered to Azure.

You need to recommend a solution to fail over the database tier of App1 to Azure. The solution must provide the ability to test failover to Azure without affecting the current environment.

What should you include in the recommendation?

- A) Azure Backup
- B) Azure Information Protection
- C) Windows Server Failover Cluster

D) Azure Site Recovery (Correct Answer)

Explanation

Correct Answer:

D

You can use Azure Site Recovery to test failover.

You run a test failover to validate your replication and disaster recovery strategy, without any data loss or downtime. A test failover doesn't impact ongoing replication, or your production environment. You can run a test failover on a specific virtual machine (VM), or on a recovery plan containing multiple VMs.

Reference:

<https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-test-failover-to-azure>

Community Discussion

Selected Answer: D

D is correct Azure Site Recovery service: Simple DR (but not HA) of Azure VMs from a primary to a secondary region.

Its correct, you have a multi-tier application that includes a web tier, an application tier and MSQL server tier

looks good, what do you think?

Question #210

HOTSPOT -

You plan to migrate on-premises Microsoft SQL Server databases to Azure.

You need to identify which deployment and resiliency options meet the following requirements:

- ⇒ Support user-initiated backups.
- ⇒ Support multiple automatically replicated instances across Azure regions.
- ⇒ Minimize administrative effort to implement and maintain business continuity.

What should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Deployment option:

	▼
Azure SQL Managed Instance	▼
SQL Server on Azure Virtual Machines	▼
An Azure SQL Database single database	▼

Resiliency option:

	▼
Auto-failover group	▼
Active geo-replication	▼
Zone-redundant deployment	▼

Explanation

Correct Answer:

Answer Area

Deployment option:

Azure SQL Managed Instance
SQL Server on Azure Virtual Machines
An Azure SQL Database single database

Resiliency option:

Auto-failover group
Active geo-replication
Zone-redundant deployment

Box 1: Azure SQL Managed Instance

Managed Instance will support native BACKUP like SQL Server.

COPY_ONLY Backup -

Once you create a credential, you can backup any database using standard BACKUP T-SQL command:

BACKUP DATABASE tpcc2501 -

TO URL = 'https://myacc.blob.core.windows.net/testcontainer/tpcc2501.bak'

WITH COPY_ONLY -

The only mandatory property is COPY_ONLY. Azure SQL Managed Instance owns the backup chain. This means that you cannot perform database backup that breaks the backup chain. Azure SQL Managed Instance allows you to perform only COPY_ONLY backups.

Box 2: Auto-failover group -

For geographic failover of instances of SQL Managed Instance, use Auto-failover groups. The auto-failover groups feature allows you to manage the replication and failover of some or all databases on a logical server to another region.

Incorrect:

Not Active geo-replication: Active geo-replication is not supported by Azure SQL Managed Instance.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/automated-backups->

overview <https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-sql-db>

Community Discussion

The answers are: Azure SQL Managed Instance Auto-failover group The requirement is to have user initiated backup hence managed instance supports it. Since its managed instanced, Geo-replication is not supported hence auto-failover groups

I would go Azure SQL Managed Instance" and "Auto-failover group". "Active geo-replication" is applied for Azure SQL Database.

The correct Answers is "Azure SQL Databases" and "Geo-replication". "Minimize administrative effort to implement and maintain business continuity." is not in Virtual Machine and the question does not especify that type of Fail Over you want, but especify multiple replications.

"Active geo-replication is not supported by Azure SQL Managed Instance but Auto Failover groups is supported." <https://docs.microsoft.com/en-us/answers/questions/37772/failover-groups-or-geo-replication.html>

Azure SQL Managed Instance & Auto-failover group 1. Azure SQL Database single database does not support user-initiated backups: - <https://learn.microsoft.com/en-us/azure/azure-sql/database/features-comparison?view=azuresql> Therefore, the answer must be Azure SQL Managed Instance or SQL Server on Azure Virtual Machines. 2. Active geo-replication is only supported by Azure SQL Database - <https://learn.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview?view=azuresql> Therefore, the answer must be either Auto-failover group or Zone-redundant deployment. 3. Zone-redundant deployment does not work across multiple Azure Regions - <https://learn.microsoft.com/en-us/azure/storage/common/storage-redundancy> Therefore, the answer must be Auto-failover group. 4. Auto-failover group is only supported by Azure SQL Managed Instance - <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/auto-failover-group-sql-mi?view=azuresql&tabs=azure-powershell> Therefore, the answer must be Azure SQL Managed Instance & Auto-failover group.

Question #211

HOTSPOT -

You configure a long-term retention policy for an Azure SQL database as shown in the exhibit. (Click the Exhibit tab.)

Configure policies

SQL server

Point in Time Restore Configuration

Configure PiTR backup retention Days

Long-term Retention Configurations

Weekly LTR Backups ⓘ

How long would you like weekly backups to be kept?

Week(s)

Monthly LTR Backups ⓘ

How long would you like the first backup of each month to be kept?

Month(s)

Yearly LTR Backups ⓘ

Which weekly backup of the year would you like to retain?

How long would you like this annual backup to be kept?

Year(s)

The first weekly backup occurred on January 4, 2020. The dates for the first 10 weekly backups are:

- ⇒ January 4, 2020
- ⇒ January 11, 2020
- ⇒ January 18, 2020
- ⇒ January 25, 2020
- ⇒ February 1, 2020
- ⇒ February 8, 2020

- ⇒ February 15, 2020
- ⇒ February 22, 2020
- ⇒ February 29, 2020
- ⇒ March 7, 2020

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The backup saved to long-term retention on January 4, 2020, will be retained for

6 weeks
12 months
10 years

The backup saved to long-term retention on January 11, 2020 will be retained for

6 weeks
12 months
10 years

Explanation

Correct Answer:

Answer Area

The backup saved to long-term retention on January 4, 2020, will be retained for

6 weeks
12 months
10 years

The backup saved to long-term retention on January 11, 2020 will be retained for

6 weeks
12 months
10 years

Box 1: 12 months -

The January 4, 2020 backup is the first backup of the month, and it will keep for 12 months.

Box 2: 10 years.

The January 11, 2020 backup is the Week 2 backup. This backup will be the yearly backup, and it will be retained for 10 years.

Note: Long-term backup retention (LTR) leverages the full database backups that are

automatically created to enable point in time restore (PITR). If an LTR policy is configured, these backups are copied to different blobs for long-term storage. The copy is a background job that has no performance impact on the database workload. The LTR policy for each database in SQL Database can also specify how frequently the LTR backups are created.

To enable LTR, you can define a policy using a combination of four parameters: weekly backup retention (W), monthly backup retention (M), yearly backup retention (Y), and week of year (WeekOfYear). If you specify W, one backup every week will be copied to the long-term storage. If you specify M, the first backup of each month will be copied to the long-term storage. If you specify Y, one backup during the week specified by WeekOfYear will be copied to the long-term storage. If the specified WeekOfYear is in the past when the policy is configured, the first LTR backup will be created in the following year. Each backup will be kept in the long-term storage according to the policy parameters that are configured when the LTR backup is created.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/long-term-retention-overview?view=azuresql>

Community Discussion

Answer is correct

Answer is correct

looks correct

Question #212

You have a new Azure subscription.

You create an Azure SQL Database instance named DB1 on an Azure SQL Database server named Server1.

You need to ensure that users can connect to DB1 in the event of an Azure regional outage. In the event of an outage, applications that connect to DB1 must be able to connect without having to update the connection strings.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) From the properties of DB1, configure geo-replication.

B) From the properties of Server1, add a failover group. (Correct Answer)

C) Create a new Azure SQL Database server named Server2. (Correct Answer)

D) From the properties of Server1, configure retention for DB1.

E) Create a new Azure SQL Database instance named DB2.

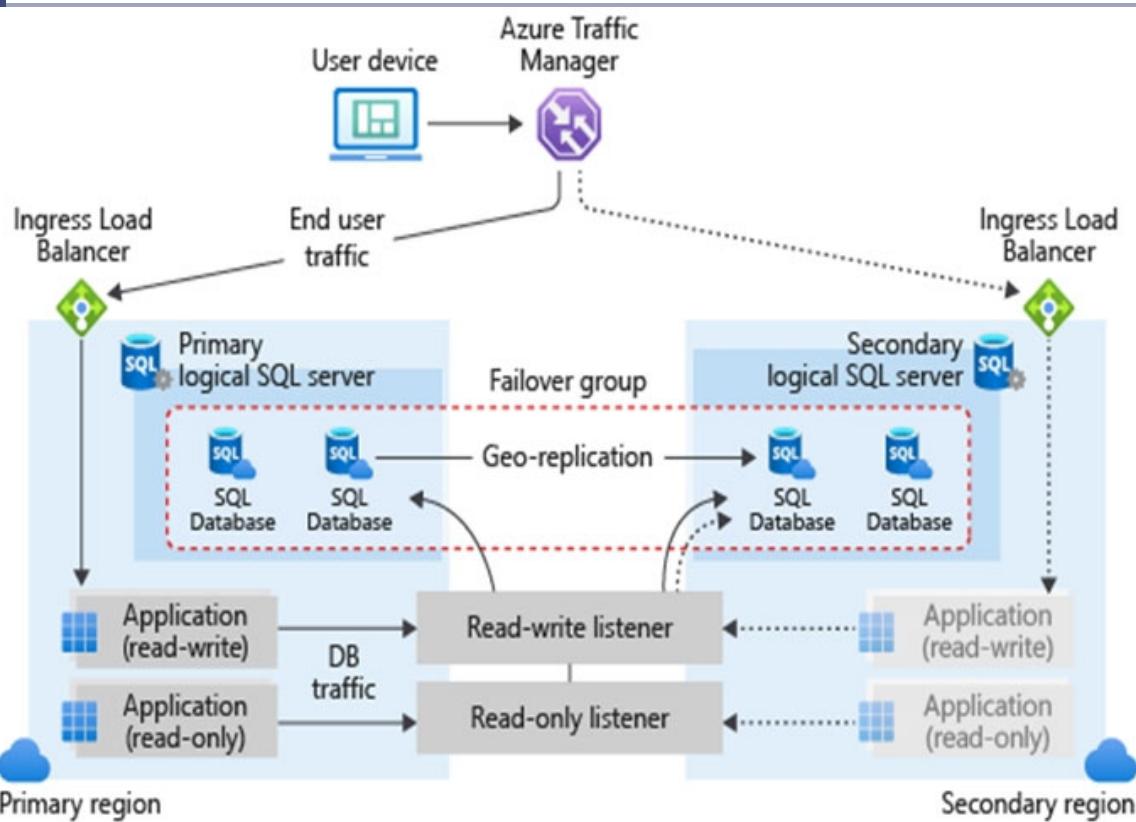
Explanation

Correct Answer:

BC

B: The auto-failover groups feature allows you to manage the replication and failover of some or all databases on a logical server to another region.

C: The auto-failover group must be configured on the primary server and will connect it to the secondary server in a different Azure region. T



Incorrect:

Not A: Geo-replication failovers require client applications to change their connection strings.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-overview?tabs=azure-powershell#best-practices-for-sql-database> <https://docs.microsoft.com/en-us/azure/azure-sql/database/failover-group-add-single-database-tutorial?tabs=azure-portal>

Community Discussion

Selected Answer: BC

Seems correct. You add Server1 to a failover group as primary server and have to create a secondary server in case of a failover occurs.

Question #213

HOTSPOT -

You have an Azure SQL database.

You run the following PowerShell script.

```
$serverName = "SERVER1"
$resourceGroup = "RG1"
$dbName = "DB1"

Connect-AzAccount

$server = Get-AzSqlServer -ServerName $serverName -ResourceGroupName
$resourceGroup

Set-AzSqlDatabaseBackupShortTermRetentionPolicy -ResourceGroupName $resourceGroup
-ServerName $server `
    -DatabaseName $dbName -RetentionDays 21

Set-AzSqlDatabaseBackupLongTermRetentionPolicy -ServerName $serverName -
    DatabaseName $dbName `
        -ResourceGroupName $resourceGroup -WeeklyRetention P52W -YearlyRetention PSY
        -WeekOfYear 52
```

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

Statements	Yes	No
DB1 can be restored to a specific point in time 30 days ago.	<input type="radio"/>	<input type="radio"/>
DB1 can be restored from a weekly backup performed six months ago.	<input type="radio"/>	<input type="radio"/>
DB1 can be restored from a yearly backup performed six years ago.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
DB1 can be restored to a specific point in time 30 days ago.	<input type="radio"/>	<input checked="" type="radio"/>
DB1 can be restored from a weekly backup performed six months ago.	<input checked="" type="radio"/>	<input type="radio"/>
DB1 can be restored from a yearly backup performed six years ago.	<input type="radio"/>	<input checked="" type="radio"/>

Box 1: No -

Short term retention is set to 21 days.

Note: Short term retention policy is used to address point-in-time restores whereas a long-term retention policy is used to address restores from long-term or older backups for various audit and compliance purposes. We can also save these backup files as part of a short-term retention policy for up to 7-35 days.

Box 2: Yes -

Weekly retention is set to P52W, which stands for a periodic frequency of 52 weeks (364 days).

Note: -WeeklyRetention -

The Weekly Retention. If just a number is passed instead of an ISO 8601 string, days will be assumed as the units. There is a minimum of 7 days and a maximum of 10 years.

Box 3: No -

Yearly retention is set to PSY.

Note: -YearlyRetention -

The Yearly Retention. If just a number is passed instead of an ISO 8601 string, days will be assumed as the units. There is a minimum of 7 days and a maximum of 10 years.

Reference:

<https://strata.opengamma.io/apidocs/com/opengamma/strata/basics/schedule/Frequency.html> <https://docs.microsoft.com/en-us/powershell/module/az.sql/set-azsqldatabasebackupshorttermretentionpolicy?view=azps-7.2.0> <https://docs.microsoft.com/en-us/powershell/module/az.sql/set-azsqldatabasebackuplongtermretentionpolicy?view=azps-7.2.0>

Community Discussion

The PSY should be P5Y

Answers given are correct. As mentioned by jackdong PSY should be P5Y. Examples: # create LTR policy with WeeklyRetention = 12 weeks. MonthlyRetention and YearlyRetention = 0 by default. Set-AzSqlDatabaseBackupLongTermRetentionPolicy - ServerName \$serverName -DatabaseName \$dbName ` -ResourceGroupName \$resourceGroup -WeeklyRetention P12W # create LTR policy with WeeklyRetention = 12 weeks, YearlyRetention = 5 years and WeekOfYear = 16 (week of April 15). MonthlyRetention = 0 by default. Set-AzSqlDatabaseBackupLongTermRetentionPolicy - ServerName \$serverName -DatabaseName \$dbName ` -ResourceGroupName \$resourceGroup -WeeklyRetention P12W -YearlyRetention P5Y -WeekOfYear 16 <https://learn.microsoft.com/en-us/azure/azure-sql/database/long-term-backup-retention-configure?view=azuresql&tabs=powershell>

Answer is correct

What is "PSY" ?

not seeing valid reference

Question #214

HOTSPOT -

You have an Azure SQL managed instance.

You need to restore a database named DB1 by using Transact-SQL.

Which command should you run? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

RESTORE	▼	DB1 FROM	▼
<input type="checkbox"/> DATABASE		DISK = N'\\NAS01\$\SQLBackups\DB1.bak';	
<input type="checkbox"/> FILE		TAPE = N'\\.\Tape0'	
<input type="checkbox"/> LOG		URL = N' https://mybackups.blob.core.windows.net/bkups/DB1.bak '	

Explanation

Correct Answer:

Answer Area

```
RESTORE DB1 FROM
  DATABASE
  FILE
  LOG
```

DISK = N'\\NAS01\\SQLBackups\\DB1.bak';
TAPE = N'\\.\Tape0'
URL = N'https://mybackups.blob.core.windows.net/bkups/DB1.bak'

Syntax for Azure SQL Managed Instance for the restore command:

--To Restore an Entire Database from a Full database backup (a Complete Restore):

```
RESTORE DATABASE { database_name | @database_name_var }
FROM URL = { 'physical_device_name' | @physical_device_name_var } [ ,...n ]
[;]
```

Arguments -

DATABASE -

Specifies the target database.

FROM URL -

Specifies one or more backup devices placed on URLs that will be used for the restore operation. The URL format is used for restoring backups from the Microsoft Azure storage service.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/restore-statements-transact-sql?view=azuresqldb-mi-current&preserve-view=true>

Community Discussion

<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/restore-sample-database-quickstart?view=azuresql>

Answer is correct

Example applies to SSMS GUI and not T-SQL commands.

Question #215

DRAG DROP -

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Description
SQL1	SQL Server on Azure Virtual Machines	Not applicable
db1	Microsoft SQL Server database	Hosted on SQL1
mysqlbackups	General purpose v2 storage account	Not applicable

You need to back up db1 to mysqlbackups, and then restore the backup to a new database named db2 that is hosted on SQL1. The solution must ensure that db1 is backed up to a stripe set.

Which three Transact-SQL statements should you execute in sequence? To answer, move the appropriate statements from the list of statements to the answer area and arrange them in the correct order.

Select and Place:

Statements

Answer Area

```
RESTORE DATABASE db2 FROM URL = URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH CREDENTIAL = 'sqlbackup', RECOVERY,
MOVE 'db1_mdf' TO
'D:\Data\db2_mdf.mdf',
MOVE 'db1_log' TO
'D:\Logs\db2_log.ldf'
```

```
BACKUP DATABASE db1
TO URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH CREDENTIAL = 'sqlbackup';
GO
```

```
RESTORE DATABASE db2 FROM URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH RECOVERY,
MOVE 'db1_mdf' TO
'D:\Data\db2_mdf.mdf',
MOVE 'db1_log' TO
'D:\Logs\db2_log.ldf'
```

```
CREATE CREDENTIAL
[https://mysqlbackups.blob.core.windows.net
/backups]
WITH IDENTITY = 'SHARED ACCESS SIGNATURE',
SECRET = '<SAS_TOKEN>'
GO
```

```
BACKUP DATABASE db1
TO URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'

GO
```

```
CREATE CREDENTIAL [sqlbackup] WITH IDENTITY =
'sqlsamplebackup'
,SECRET = '<mystorageaccountaccesskey>';
GO
```



Explanation

Correct Answer:

Statements

```
RESTORE DATABASE db2 FROM URL = URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH CREDENTIAL = 'sqlbackup', RECOVERY,
MOVE 'db1_mdf' TO
'D:\Data\db2_mdf.mdf',
MOVE 'db1_log' TO
'D:\Logs\db2_log.ldf'
```

```
BACKUP DATABASE db1
TO URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH CREDENTIAL = 'sqlbackup';
GO
```

```
CREATE CREDENTIAL [sqlbackup] WITH IDENTITY =
'sqlsamplebackup'
, SECRET = '<mystorageaccountaccesskey>';
GO
```

Answer Area

```
CREATE CREDENTIAL
[https://mysqlbackups.blob.core.windows.net
/backups]
WITH IDENTITY = 'SHARED ACCESS SIGNATURE',
SECRET = '<SAS_TOKEN>'
GO
```

```
BACKUP DATABASE db1
TO URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'

GO
```

```
RESTORE DATABASE db2 FROM URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_1.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_2.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_3.bak'
, URL =
'https://mysqlbackups.blob.core.windows.net
/backups/db1_4.bak'
WITH RECOVERY,
MOVE 'db1_mdf' TO
'D:\Data\db2_mdf.mdf',
MOVE 'db1_log' TO
'D:\Logs\db2_log.ldf'
```



[https://<

Create a credential.

The following examples create SQL Server credentials for authentication to the Microsoft Azure Blob Storage service.

```
CREATE CREDENTIAL [https://<mystorageaccountname>.blob.core.windows.net/<mystorageaccountcontainername>]
```

```
WITH IDENTITY = 'SHARED ACCESS SIGNATURE',  
SECRET = '<SAS_TOKEN>';
```

Incorrect:

The other CREATE CREDENTIAL option does not refer to mysqlbackups - the name of the account.

Box 2: BACKUP..

Do no include WITH CREDENTIAL when backing up To URL using Shared Access Signature.

Example:

```
BACKUP DATABASE AdventureWorks2016
```

```
TO URL = 'https://<mystorageaccountname>.blob.core.windows.net/<mycontainername>/AdventureWorks2016.bak';
```

GO -

Box 3: RESTORE -

Do no include WITH CREDENTIAL when restoring up To URL using Shared Access Signature.

Example: BACKUP DATABASE AdventureWorks2016

```
TO URL = 'https://<mystorageaccountname>.blob.core.windows.net/<mycontainername>/AdventureWorks2016.bak';
```

GO -

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/sql-server-backup-to-url?view=sql-server-ver15>

Community Discussion

Answer is correct

meaning the WITH CREDENTIAL in this case is not supported

let's just say that M\$ does not employ the brightest bulbs to write these questions...

let's just say that M\$ does not employ the brightest bulbs to write these questions...

meaning the WITH CREDENTIAL in this case is not supported

Question #216

HOTSPOT -

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Configuration
DB1	Azure SQL Database	Hyperscale service tier No secondary replicas
App1	Azure Web Apps	App1 has read-only access to DB1. There are multiple instances of App1.

You need to create a read-only replica of DB1 and configure the App1 instances to use the replica.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To add read-only replicas of DB1:

- Create a replica on the same logical server.
- Create a new logical server and configure geo-replication.
- Create a new logical server and configure an auto-failover group.

To configure App1 instances to access the read-only replica:

- Add an ApplicationIntent entry to the connection string.
- Add a MultiSubnetFailover entry to the App1 connection string.
- Create a dedicated endpoint and configure the App1 connection string to point to the endpoint.

Explanation

Correct Answer:

Answer Area

To add read-only replicas of DB1:

Create a replica on the same logical server.
Create a new logical server and configure geo-replication.
Create a new logical server and configure an auto-failover group.

To configure App1 instances to access the read-only replica:

Add an ApplicationIntent entry to the connection string.
Add a MultiSubnetFailover entry to the App1 connection string.
Create a dedicated endpoint and configure the App1 connection string to point to the endpoint.

Box 1: Create a replicate on the same logical server.

A High Availability (HA) replica uses the same page servers as the primary replica.

A named replica, just like an HA replica, uses the same page servers as the primary replica.

Box 2: Add an ApplicationIntent entry to the connection string.

Connecting to an HA replica.

In Hyperscale databases, the ApplicationIntent argument in the connection string used by the client dictates whether the connection is routed to the read-write primary replica or to a read-only HA replica. If ApplicationIntent is set to ReadOnly and the database doesn't have a secondary replica, connection will be routed to the primary replica and will default to the ReadWrite behavior.

Example:

-- Connection string with application intent

```
Server=tcp:<myserver>.database.windows.net;Database=<mydatabase>;ApplicationIntent=ReadOnly;User  
ID=<myLogin>;Password=<myPassword>;Trusted_Connection=False; Encrypt=True;
```

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale-replicas?view=azuresql&tabs=tsql> <https://sqlserverguides.com/read-only-replica-azure-sql/>

Community Discussion

It is correct, but geo-replication is also a valid option for creating a readable secondary according to the article <https://docs.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale-replicas?view=azuresql&tabs=tsql> <https://sqlserverguides.com/read-only-replica-azure-sql/>

For Hyperscale Service Tier, you can create High Availability replica. High Availability replica A High Availability (HA) replica uses the same page servers as the primary replica, so no data copy is required to add an HA replica. HA replicas are mainly used to increase database availability; they act as hot standbys for failover purposes. <https://learn.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale-replicas?view=azuresql&tabs=tsql#high-availability-replica>

For Hyperscale Service Tier, you can create High Availability replica. High Availability replica A High Availability (HA) replica uses the same page servers as the primary replica, so no data copy is required to add an HA replica. HA replicas are mainly used to increase database availability; they act as hot standbys for failover purposes. <https://learn.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale-replicas?view=azuresql&tabs=tsql#high-availability-replica>

<https://learn.microsoft.com/en-us/azure/azure-sql/database/service-tier-hyperscale-replicas?view=azuresql&tabs=tsql#high-availability-replica> – answer is correct. Replica with ApplicationIntent

The answer is not correct. We can't create a replica on the same logical server. We need to create or use a different logical server and create a geo-replica (Data management > Replica)

Question #217

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 two Azure SQL Database servers named Server1 and Server2. Each server contains an Azure SQL database named Database1.

You need to restore Database1 from Server1 to Server2. The solution must replace the existing Database1 on Server2.

Solution: From the Azure portal, you delete Database1 from Server2, and then you create a new database on Server2 by using the backup of Database1 from Server1.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

This is the correct solution as you can't overwrite an existing Azure SQL Database database during restore.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups#geo-restore> <https://docs.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups>

Community Discussion

As already noted, you cannot overwrite an existing database during an Azure SQL DB restore operation. In fact, you also cannot use REPLACE during the operation so the given answer is wrong. The correct answer is, yes, this meets the requirements. After having deleted the existing database you can set the restore operation to restore the database as any name you choose.

Yes is the correct answer but answer is shown as No please correct it. Thanks

Selected Answer: A

Yes - Since Azure SQL DB RESTORE doesn't allow REPLACE, you would have to DROP before RESTORE.

The answer is Yes. Use Master go CREATE DATABASE MyAzuredemo_1 AS COPY OF myazuredemo12.MyAzureDemo (SERVICE_OBJECTIVE = 'S2') go

Note, the question says to restore from Azure Portal. If you log on Azure Portal, you can create a new database but you can NOT restore from a backup because there is no "Restore" option in Azure SQL Database no matter you use SSMS or Azure Data Studio. The approach is to export from source database and import into target database. I was wrong. The answer is correct, "No".

Question #218

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 two Azure SQL Database servers named Server1 and Server2. Each server contains an Azure SQL database named Database1.

You need to restore Database1 from Server1 to Server2. The solution must replace the existing Database1 on Server2.

Solution: You run the Remove-AzSqlDatabase PowerShell cmdlet for Database1 on Server2. You run the Restore-AzSqlDatabase PowerShell cmdlet for Database1 on Server2.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

Correct solution: From the Azure portal, you delete Database1 from Server2, and then you create a new database on Server2 by using the backup of Database1 from Server1.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups>

Community Discussion

The answer is yes. See <https://docs.microsoft.com/en-us/powershell/module/az.sql/restore-azsqldatabase?view=azps-4.5.0> that doesn't have replsce option. The suggested solution is not for Azure DB

"You run the Restore-AzSqlDatabase PowerShell cmdlet for Database1 on Server2." Based on the above statement, the above command will end up restoring backup of the deleted database again. So the answer is (B) No. ???

Sorry, answer is actually Yes. You can do it using the "-FromGeoBackup" parameter.
Tested myself.

Sorry, answer is actually Yes. You can do it using the "-FromGeoBackup" parameter.
Tested myself.

No. Azure SQL Database does not currently support cross server restore. The source and target server names must be the same. <https://docs.microsoft.com/en-us/powershell/module/servicemanagement/azure.service/start-azuresqldatabaserestore?view=azuresmps-4.0.0>

Question #219

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 two Azure SQL Database servers named Server1 and Server2. Each server contains an Azure SQL database named Database1.

You need to restore Database1 from Server1 to Server2. The solution must replace the existing Database1 on Server2.

Solution: You restore the backup for Database1 from Server1 to the Server2 by using the RESTORE Transact-SQL command with the REPLACE option.

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer:

A

You can't overwrite an existing Azure SQL Database database during restore.

Correct solution: From the Azure portal, you delete Database1 from Server2, and then you create a new database on Server2 by using the backup of Database1 from Server1.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups>

Community Discussion

Selected Answer: B

Correct answer is No.

It's Incorrect, the correct answer: B. No The first, and most important thing to notice here is that it's supplying me with a new name. I can change that to anything I want as long as it's not the name of a database already in existence on my Azure SQL Database Server. You read that correctly, you can restore a database to Azure SQL Database, but there is no WITH REPLACE option. The restore creates a new database. below ref link <https://www.scarydba.com/2016/01/11/restoring-a-database-in-azure/>

Selected Answer: B

You cannot replace option in Azure SQL Database.

Selected Answer: B

There is no REPLACE option in Azure SQL Database, or even there is no restore option with T-SQL. <https://learn.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups?view=azuresql-db&tabs=azure-portal>

Selected Answer: B

Correct answer is No.

Question #220

You have an Always On availability group deployed to Azure virtual machines.

The availability group contains a database named DB1 and has two nodes named

SQL1 and SQL2. SQL1 is the primary replica.

You need to initiate a full backup of DB1 on SQL2.

Which statement should you run?

- A) BACKUP DATABASE DB1 TO URL='https://mystorageaccount.blob.core.windows.net/mycontainer/DB1.bak' with (Differential, STATS=5, COMPRESSION);
- B) BACKUP DATABASE DB1 TO URL='https://mystorageaccount.blob.core.windows.net/mycontainer/DB1.bak' with (COPY_ONLY, STATS=5, COMPRESSION); (Correct Answer)**
- C) BACKUP DATABASE DB1 TO URL='https://mystorageaccount.blob.core.windows.net/mycontainer/DB1.bak' with (File_Snapshot, STATS=5, COMPRESSION);
- D) BACKUP DATABASE DB1 TO URL='https://mystorageaccount.blob.core.windows.net/mycontainer/DB1.bak' with (NoInit, STATS=5, COMPRESSION);

Explanation

Correct Answer:

B

BACKUP DATABASE supports only copy-only full backups of databases, files, or filegroups when it's executed on secondary replicas. Copy-only backups don't impact the log chain or clear the differential bitmap.

Incorrect Answers:

A: Differential backups are not supported on secondary replicas. The software displays this error because the secondary replicas support copy-only database backups.

Reference:

<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/active-secondaries-backup-on-secondary-replicas-always-on-availability-groups>

Community Discussion

The question specifies that this is a backup on SQL2, which is a Secondary replica. Backups on Secondary replicas can only be of the type COPY_ONLY.

Thought copy_only is only relevant to SQL DB/MI not IaaS servers

You should use the COPY_ONLY option. This causes the backup to run as a copy-only backup so the backup does not affect on your normal backup schedule. This lets you create a backup that is independent of your regularly scheduled, conventional backups.

Selected Answer: B

Secondary replica database can only be backup COPY_ONLY.

<https://learn.microsoft.com/en-us/sql/database-engine/availability-groups/windows/active-secondaries-backup-on-secondary-replicas-always-on-availability-groups?view=sql-server-ver16>

Question #221

HOTSPOT -

You have a SQL Server on Azure Virtual Machines instance named VM1 that hosts a database named DB1.

You run the following query.

```
BACKUP LOG DB1 TO DISK = '\\File1\SQLBackups\DB1.trn'  
WITH NORECOVERY, COPY_ONLY, CONTINUE_AFTER_ERROR;  
GO
```

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

Statements	Yes	No
The log file will be truncated.	<input type="radio"/>	<input type="radio"/>
DB1 will be placed in an offline state.	<input type="radio"/>	<input type="radio"/>
You are performing a tail-log backup.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
The log file will be truncated.	<input type="radio"/>	<input checked="" type="radio"/>
DB1 will be placed in an offline state.	<input type="radio"/>	<input checked="" type="radio"/>
You are performing a tail-log backup.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

A copy-only log backup preserves the existing log archive point and, therefore, does not affect the sequencing of regular log backups.

Box 2: No -

Box 3: Yes -

If the database is online and you plan to perform a restore operation on the database, begin by backing up the tail of the log. To avoid an error for an online database, you must use the ... WITH NORECOVERY option of the BACKUP Transact-SQL statement.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/tail-log-backups-sql-server> <https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/copy-only-backups-sql-server>

Community Discussion

<https://learn.microsoft.com/en-us/sql/relational-databases/backup-restore/tail-log-backups-sql-server?view=sql-server-ver16> Correct

with NORECOVERY option, the db will be placed in RESTORING state, so while technically not offline, still inaccessible...

absolutely correct - there is a major difference between offline and not accessible (restoring state). so the answer is correct.

absolutely correct - there is a major difference between offline and not accessible (restoring state). so the answer is correct.

Question #222

You have an Azure SQL database named DB3.

You need to provide a user named DevUser with the ability to view the properties of DB3 from Microsoft SQL Server Management Studio (SSMS) as shown in the exhibit. (Click the Exhibit tab.)

Database Properties - DB3

General Options Configure SLO Change Tracking Permissions Query Store

Script Help

Collation: SQL_Latin1_General_CI_AS

Compatibility level: SQL Server 2019 (150)

Other options:

Auto Close	False
Auto Create Incremental Statistics	False
Auto Create Statistics	True
Auto Shrink	False
Auto Update Statistics	True
Auto Update Statistics Asynchronously	False
Cursor	
Close Cursor on Commit Enabled	False
Default Cursor	GLOBAL
Database Scoped Configurations	
Legacy Cardinality Estimation	OFF
Legacy Cardinality Estimation For Secondary	PRIMARY
Max DOP	0
Max DOP For Secondary	ON
Parameter Sniffing	ON
Parameter Sniffing For Secondary	PRIMARY
Query Optimizer Fixes	OFF
Query Optimizer Fixes For Secondary	PRIMARY
Miscellaneous	
Allow Snapshot Isolation	True

Connection

Server: dp300.database.windows.net
Connection: dp300
View connection properties

Progress

Ready

Which Transact-SQL command should you run?

- A) GRANT SHOWPLAN TO DevUser
- B) GRANT VIEW DEFINITION TO DevUser
- C) GRANT VIEW DATABASE STATE TO DevUser (Correct Answer)**
- D) GRANT SELECT TO DevUser

Explanation

Correct Answer:

C

The exhibits displays Database [State] properties.

To query a dynamic management view or function requires SELECT permission on object and VIEW SERVER STATE or VIEW DATABASE STATE permission.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/databases/database-properties-options-page>

Community Discussion

GRANT VIEW DATABASE STATE TO [<user>];

I just tested it, and VIEW DATABASE STATE is required. "VIEW DATABASE STATE permission denied in database 'myDatabase'. The user does not have permission to perform this action. (Microsoft SQL Server, Error: 262)"

I just tested it, and VIEW DATABASE STATE is required. "VIEW DATABASE STATE permission denied in database 'myDatabase'. The user does not have permission to perform this action. (Microsoft SQL Server, Error: 262)"

All wrong. Tested myself on SQL 2019. No privilege is needed to view the Options properties. Only adding user to the database was enough (CREATE USER [DevUser] FOR LOGIN [DevUser])

Selected Answer: C

Answer is correct

Question #223

HOTSPOT -

You have SQL Server on an Azure virtual machine that contains a database named DB1.

The database reports a CHECKSUM error.

You need to recover the database.

How should you complete the statements? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

USE master;

ALTER DATABASE [DB1] SET

GO

OFFLINE
ONLINE
SINGLE_USER
TRUSTWORTHY

WITH ROLLBACK IMMEDIATE;

DBCC CHECKDB ('DB1',

GO

NOINDEX
PHYSICAL_ONLY
REPAIR_ALLOW_DATA_LOSS
REPAIR_FAST

WITH NO_INFOMSGS;

ALTER DATABASE [DB1] SET

GO

MULTI_USER;
ONLINE;
OPEN;
TRUSTWORTHY;

Explanation

Correct Answer:

Answer Area

```
USE master;
ALTER DATABASE [DB1] SET
GO
WITH ROLLBACK IMMEDIATE;
```

OFFLINE
ONLINE
SINGLE_USER
TRUSTWORTHY

```
DBCC CHECKDB ('DB1',
GO
WITH NO_INFOMSGS;
```

NOINDEX
PHYSICAL_ONLY
REPAIR_ALLOW_DATA_LOSS
REPAIR_FAST

```
ALTER DATABASE [DB1] SET
GO
WITH
MULTI_USER;
ONLINE;
OPEN;
TRUSTWORTHY;
```

MULTI_USER;
ONLINE;
OPEN;
TRUSTWORTHY;

Box 1: SINGLE_USER -

The specified database must be in single-user mode to use one of the following repair options.

Box 2: REPAIR_ALLOW_DATA LOSS -

REPAIR_ALLOW_DATA LOSS tries to repair all reported errors. These repairs can cause some data loss.

Note: The REPAIR_ALLOW_DATA LOSS option is a supported feature but it may not always be the best option for bringing a database to a physically consistent state. If successful, the REPAIR_ALLOW_DATA LOSS option may result in some data loss. In fact, it may result in more data lost than if a user were to restore the database from the last known good backup.

Incorrect Answers:

REPAIR_FAST -

Maintains syntax for backward compatibility only. No repair actions are performed.

Box 3: MULTI_USER -

MULTI_USER -

All users that have the appropriate permissions to connect to the database are allowed.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql>

Community Discussion

for Box 2, the answer is correct. However the wrong option is high-lighted.

For any Admins or Admins to be...these answers present the wrong way of doing this in the real world. The correct real world methodology (assuming you have all the time in the world which you seldom will have) is to recover from last known good backup. If you want to fix the database then first set the database in emergency mode not single_user. This prevents another thread grabbing the access to the database before you. Then you would run DBCC CHECKDB with the REPAIR_REBUILD option. This will not cause data loss. After that because you're the only one with access from a query window now issue the ALTER DATABASE SET SINGLE_USER statement and, if approved, use the REPAIR_ALLOW_DATA_LOSS statement and then set the database back to multiuser.

SINGLE_USER REPAIR_ALLOW_DATA_LOSS MULTI USER REPAIR_FAST doesn't actually make any changes.

Yes you are tight

So misleading.. some of the discussions here. The correct answer is mentioned in the explanation itself. Incorrect Answers: REPAIR_FAST - Maintains syntax for backward compatibility only. No repair actions are performed. REPAIR_ALLOW_DATA_LOSS is correct answer for Box2

Question #224

HOTSPOT -

You have an Azure SQL Database managed instance named sqldbmi1 that contains a database name Sales.

You need to initiate a backup of Sales.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
BACKUP DATABASE Sales
TO DISK = '\\BackupSystem\BackupDisk1\Sales.bak'
TO DISK = 'X:\BAK\Sales.bak'
TO 'Sales_Backup'
TO URL = 'https://storage1.blob.core.windows.net/blob1/Sales.bak'
WITH STATS = 5,
COPY_ONLY;
ENCRYPTION;
FILE_SNAPSHOT;
NO_TRUNCATE
```

Explanation

Correct Answer:

Answer Area

```
BACKUP DATABASE Sales
TO DISK = '\\BackupSystem\BackupDisk1\Sales.bak'
TO DISK = 'X:\BAK\Sales.bak'
TO 'Sales_Backup'
TO URL = 'https://storage1.blob.core.windows.net/blob1/Sales.bak'

WITH STATS = 5,
COPY_ONLY;
ENCRYPTION;
FILE_SNAPSHOT;
NO_TRUNCATE
```

Box 1: TO URL = 'https://storage1.blob.core.windows.net/blob1/Sales.bak'

Native database backup in Azure SQL Managed Instance.

You can backup any database using standard BACKUP T-SQL command:

BACKUP DATABASE tpcc2501 -

TO URL = 'https://myacc.blob.core.windows.net/testcontainer/tpcc2501.bak'

WITH COPY_ONLY -

Box 2: COPY_ONLY -

Reference:

<https://techcommunity.microsoft.com/t5/azure-sql-database/native-database-backup-in-azure-sql-managed-instance/ba-p/386154>

Community Discussion

1.URL : SQLMI is paas on cloud, so backup must stored on blob storage
 2.COPY_ONLY:
 SQLMI has "managed" everything, includes backup chain, so user can not break it's chain by using different method than COPY_ONLY.

Option 2 is wrong because in Azure SQL PaaS you don't have any access to any disk or the operating system at all

<https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/transact-sql-tsql-differences-sql-server>
 SQL Managed Instance has automatic backups, so users can create full database COPY_ONLY backups. Differential, log, and file snapshot backups aren't

supported. With a SQL Managed Instance, you can back up an instance database only to an Azure Blob storage account: Only BACKUP TO URL is supported. FILE, TAPE, and backup devices aren't supported. Most of the general WITH options are supported. COPY_ONLY is mandatory. FILE_SNAPSHOT isn't supported. Tape options: REWIND, NOREWIND, UNLOAD, and NOUNLOAD aren't supported. Log-specific options: NORECOVERY, STANDBY, and NO_TRUNCATE aren't supported.

it is trying to store backup file within the blob storage. what is the problem!

I think the comments on here do more harm than good...

Question #225

You have the following Transact-SQL query.

```
SELECT
    [file_id] AS [File ID],
    [type] AS [File Type],
    substring([physical_name], 1,1) AS [Drive],
    [name] AS [Logical Name],
    [physical_name] AS [Physical Name],
    CAST([size] as DECIMAL(38,0))/128.0 AS [ColumnA],
    CAST(FILEPROPERTY([name], 'SpaceUsed') AS DECIMAL(38,0))/128.0 AS
[ColumnB],
    (CAST([size] AS DECIMAL(38,0))/128.0) - (CAST(FILEPROPERTY([name],
'SpaceUsed') AS DECIMAL (38,0))/128.0) AS [ColumnC],
    [max_size] AS [ColumnD],
    [is_percent_growth] AS [Percent Growth Enabled],
    [growth] AS [Growth Rate],
    SYSDATETIME() AS [Current Date]
FROM sys.database_files;
```

Which column returned by the query represents the free space in each file?

- A) ColumnA
- B) ColumnB
- C) ColumnC (Correct Answer)**
- D) ColumnD

Explanation

Correct Answer:

C

Example:

Free space for the file in the below query result set will be returned by the FreeSpaceMB

column.

```
SELECT DB_NAME() AS DbName,
       name AS FileName,
       type_desc,
       size/128.0 AS CurrentSizeMB,
       size/128.0 - CAST(FILEPROPERTY(name, 'SpaceUsed') AS INT)/128.0 AS FreeSpaceMB

FROM sys.database_files -
WHERE type IN (0,1);
```

Reference:
<https://www.sqlshack.com/how-to-determine-free-space-and-file-size-for-sql-server-databases/>

Community Discussion

Size - Used = Free Space

The provided answer is correct.

C is right

Selected Answer: C

The provided answer is correct.

Selected Answer: C

C is correct

Question #226

HOTSPOT -

You have an Azure Data Lake Storage Gen2 account named account1 that stores logs as shown in the following table.

Type	Designated retention period
Application	360 days
Infrastructure	60 days

You do not expect that the logs will be accessed during the retention periods.

You need to recommend a solution for account1 that meets the following requirements:

- ⇒ Automatically deletes the logs at the end of each retention period
- ⇒ Minimizes storage costs

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To minimize storage costs:

Store the infrastructure logs and the application logs in the Archive access tier.

Store the infrastructure logs and the application logs in the Cool access tier.

Store the infrastructure logs in the Cool access tier and the application logs in the Archive access tier.

To delete the logs automatically:

Azure Data Factory pipelines

Azure Blob storage lifecycle management rules

Immutable Azure Blob storage time-based retention policies

Explanation

Correct Answer:

Answer Area

To minimize storage costs:

Store the infrastructure logs and the application logs in the Archive access tier.

Store the infrastructure logs and the application logs in the Cool access tier.

Store the infrastructure logs in the Cool access tier and the application logs in the Archive access tier.

To delete the logs automatically:

Azure Data Factory pipelines

Azure Blob storage lifecycle management rules

Immutable Azure Blob storage time-based retention policies

Box 1: Store the infrastructure logs in the Cool access tier the application logs in the

Archive access tier

Hot - Optimized for storing data that is accessed frequently.

Cool - Optimized for storing data that is infrequently accessed and stored for at least 30 days.

Archive - Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements, on the order of hours.

Box 2: Azure Blob storage lifecycle management rules

Blob storage lifecycle management offers a rich, rule-based policy that you can use to transition your data to the best access tier and to expire data at the end of its lifecycle.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers>

Community Discussion

Given answer is correct.

You are wrong. Data in the Archive tier should be stored for a minimum of 180 days.

You are wrong. Data in the Archive tier should be stored for a minimum of 180 days.

Why the cool tier for the infrastructure logs? If the costs must be minimized it would be cheaper to put both in archive

This question belongs to the exam DP-203

Question #227

HOTSPOT -

You have an Azure Data Lake Storage Gen2 container.

Data is ingested into the container, and then transformed by a data integration application. The data is NOT modified after that. Users can read files in the container but cannot modify the files.

You need to design a data archiving solution that meets the following requirements:

- ⇒ New data is accessed frequently and must be available as quickly as possible.
- ⇒ Data that is older than five years is accessed infrequently but must be available within one second when requested.
- ⇒ Data that is older than seven years is NOT accessed. After seven years, the data must be persisted at the lowest cost possible.
- ⇒ Costs must be minimized while maintaining the required availability.

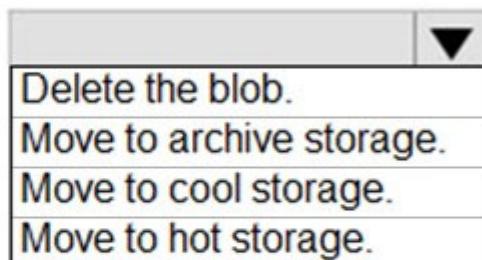
How should you manage the data? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

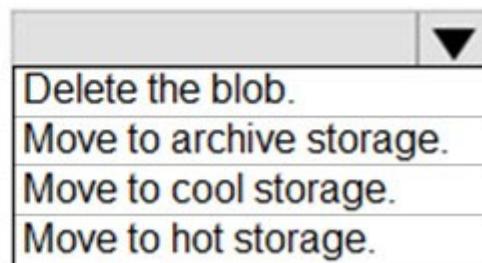
Hot Area:

Answer Area

Five-year-old data:



Seven-year-old data:



Explanation

Correct Answer:

Answer Area

Five-year-old data:

- Delete the blob.
- Move to archive storage.
- Move to cool storage.
- Move to hot storage.

Seven-year-old data:

- Delete the blob.
- Move to archive storage.
- Move to cool storage.
- Move to hot storage.

Box 1: Move to cool storage -

The cool access tier has lower storage costs and higher access costs compared to hot storage. This tier is intended for data that will remain in the cool tier for at least 30 days. Example usage scenarios for the cool access tier include:

Short-term backup and disaster recovery

Older data not used frequently but expected to be available immediately when accessed
Large data sets that need to be stored cost effectively, while more data is being gathered for future processing

Note: Hot - Optimized for storing data that is accessed frequently.

Cool - Optimized for storing data that is infrequently accessed and stored for at least 30 days.

Archive - Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements, on the order of hours.

Box 2: Move to archive storage -

Example usage scenarios for the archive access tier include:

- ⇒ Long-term backup, secondary backup, and archival datasets
- ⇒ Original (raw) data that must be preserved, even after it has been processed into final usable form
- ⇒ Compliance and archival data that needs to be stored for a long time and is hardly ever accessed

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers>

Community Discussion

Given answer is correct.

This question belongs to the exam DP-203

Correct

Answer is correct

Question #228

You plan to perform batch processing in Azure Databricks once daily.

Which type of Databricks cluster should you use?

A) automated (Correct Answer)

- B) interactive
- C) High Concurrency

Explanation

Correct Answer:

A

Azure Databricks makes a distinction between all-purpose clusters and job clusters. You use all-purpose clusters to analyze data collaboratively using interactive notebooks. You use job clusters to run fast and robust automated jobs.

The Azure Databricks job scheduler creates a job cluster when you run a job on a new job cluster and terminates the cluster when the job is complete.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/clusters>

Community Discussion

This question is related to the DP-203 (Azure Data Engineer Associate) exam.

DP-203!

This question belongs to the exam DP-203

Selected Answer: A

You use job clusters to run fast and robust automated jobs.

it looks good, what do you think?

Question #229

HOTSPOT -

You have two Azure virtual machines named VM1 and VM2 that run Windows Server 2019. VM1 and VM2 each host a default Microsoft SQL Server 2019 instance. VM1 contains a database named DB1 that is backed up to a file named D:\DB1.bak.

You plan to deploy an Always On availability group that will have the following configurations:

- ⇒ VM1 will host the primary replica of DB1.
- ⇒ VM2 will host a secondary replica of DB1.

You need to prepare the secondary database on VM2 for the availability group. How should you complete the Transact-SQL statement? To answer, select the appropriate options in the answer area.

Hot Area:

Answer Area

▼	DATABASE MyDB1
BACKUP	
CREATE	
RESTORE	

FROM DISK = 'D:\DB1.bak'

WITH

▼	
NORECOVERY	
RECOVERY	
STANDBY	

GO

Explanation

Correct Answer:

Answer Area

```
 DATABASE MyDB1
BACKUP
CREATE
RESTORE
FROM DISK = 'D:\DB1.bak'
WITH
GO
NORECOVERY
RECOVERY
STANDBY
```

Box 1: RESTORE -

Use RESTORE WITH NORECOVERY for every restore operation.

BOX 2: NORECOVERY -

Reference:

[https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/manually-prepare-a-secondary-database-for-an-availability-group-sql-server? view=sql-server-ver15](https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/manually-prepare-a-secondary-database-for-an-availability-group-sql-server?view=sql-server-ver15)

Community Discussion

Answer is correct RESTORE WITH NORECOVERY

This is correct RESTORE WITH NORECOVERY

it looks good, what do you think?

Its OK, in the web say "Use RESTORE WITH NORECOVERY for every restore operation. Prerequisites and restrictions Make sure that the system where you plan to place database possesses a disk drive with sufficient space for the secondary databases. The name of the secondary database must be the same as the name of the primary database. Use RESTORE WITH NORECOVERY for every restore operation. If the secondary

database needs to reside on a different file path (including the drive letter) than the primary database, the restore command must also use the WITH MOVE option for each of the database files to specify them to the path of the secondary database. If you restore the database filegroup by filegroup, be sure to restore the whole database. After restoring the database, you must restore (WITH NORECOVERY) every log backup created since the last restored data backup. "

Question #230

DRAG DROP -

You have an Azure Active Directory (Azure AD) tenant named contoso.com that contains a user named and an Azure SQL managed instance named SQLMI1.

You need to ensure that can create logins in SQLMI1 that map to Azure AD service principals.

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:

Actions	Answer Area
Run CREATE LOGIN user1@contoso.com FROM EXTERNAL PROVIDER on the master database.	
Run ALTER SERVER ROLE securityadmin ADD MEMBER user1@contoso.com.	 
Create a managed identity for SQLMI1.	 
Grant SQLMI1 read access to Azure AD.	
Run CREATE USER user1@contoso.com FROM LOGIN user1@contoso.com.	

Explanation

Correct Answer:

Actions

Create a managed identity for SQLMI1.

Run CREATE USER user1@contoso.com FROM LOGIN user1@contoso.com.

Answer Area

Grant SQLMI1 read access to Azure AD.

Run CREATE LOGIN user1@contoso.com FROM EXTERNAL PROVIDER on the master database.

Run ALTER SERVER ROLE securityadmin ADD MEMBER user1@contoso.com.

Box 1: Grant SQLMI1 read access to Azure AD

Give required permission.

Box 2: Run CREATE LOGIN..

Create a login.

Box 3: RUN ALTER SERVER..

Add a user to the login created in step 2.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/aad-security-configure-tutorial>

Community Discussion

Answer is correct: - Grant MI reader access to AD - Create login - Grant sysadmin or security admin permissions

Answer is correct: - Grant MI reader access to AD - Create login - Grant sysadmin or security admin permissions

<https://learn.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-configure?view=azuresql-mi&tabs=azure-powershell> - grant read access first.

- Run Create Login from External - Run Create User from login - Run Alter permissions for server role add user

Disregard, given answer is correct

Question #231

HOTSPOT -

You have a 50-TB Microsoft SQL Server database named DB1.

You need to reduce the time it takes to perform database consistency checks of DB1.

Which Transact-SQL command should you run? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

DBCC CHECKDB ([DB1],	with	ALL_ERRORMSG NO_INFOMSGS PHYSICAL_ONLY
NOINDEX		
REPAIR_FAST		
REPAIR_REBUILD		

Explanation

Correct Answer:

Answer Area

DBCC CHECKDB ([DB1],	with	ALL_ERRORMSG NO_INFOMSGS PHYSICAL_ONLY
NOINDEX		
REPAIR_FAST		
REPAIR_REBUILD		

Box 1: NOINDEX -

NOINDEX specifies that intensive checks of nonclustered indexes for user tables will not be performed. This choice decreases the overall execution time.

NOINDEX doesn't affect system tables because integrity checks are always performed on system table indexes.

Box 2: PHYSICAL_ONLY -

Many new checks have been introduced to include the new features.

Therefore, using the PHYSICAL_ONLY option may cause a much shorter run-time for DBCC CHECKDB on large databases and is recommended for frequent use on production systems.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql?view=sql-server-ver15>

Community Discussion

Answer is correct: NOINDEX Specifies that intensive checks of nonclustered indexes for user tables will not be performed. This choice decreases the overall execution time. NOINDEX doesn't affect system tables because integrity checks are always performed on system table indexes. PHYSICAL_ONLY Limits the checking to the integrity of the physical structure of the page and record headers and the allocation consistency of the database. This check is designed to provide a small overhead check of the physical consistency of the database, but it can also detect torn pages, checksum failures, and common hardware failures that can compromise a user's data. <https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql?view=sql-server-ver15>

sorry the second option is PHYSICAL_ONLY

sorry the second option is PHYSICAL_ONLY

NOINDEX EXTENDED_LOGICAL_CHECKS

Question #232

You have an Azure SQL database named DB1 that contains a private certificate named Sales. The private key for Sales is encrypted with a password.

You need to change the password for the private key.

Which Transact-SQL statement should you run?

- A) ALTER CERTIFICATE Sales WITH PRIVATE KEY (DECRYPTION BY PASSWORD = ' EWYx9Xk+\$#');
- B) ALTER CERTIFICATE Sales WITH PRIVATE KEY (ENCRYPTION BY PASSWORD = ' 6YY9YcD!pV');
- C) ALTER CERTIFICATE Sales WITH PRIVATE KEY (DECRYPTION BY PASSWORD = 'Mb^68K&*w%'), ENCRYPTION BY PASSWORD = ' 6YY9YcD!pV'); (Correct Answer)**
- D) ALTER CERTIFICATE Sales WITH PRIVATE KEY (FILE = 'D:\importkeys\SalesNew, (DECRYPTION BY PASSWORD = ' Mb^68K&*w%');

Explanation

Correct Answer:

C

Azure SQL database ALTER CERTIFICATE changes the password used to encrypt the private key of a certificate, removes the private key, or imports the private key if none is present. Example, changing the password that is used to encrypt the private key:

```
ALTER CERTIFICATE Shipping11 -  
WITH PRIVATE KEY (DECRYPTION BY PASSWORD = '95hkjdskgFDGGG4%',  
ENCRYPTION BY PASSWORD = '34958tosdgfkh##38');
```

Reference:

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

Community Discussion

Because a password is already in place, and you have to change it, go to the solution with Decryption & Encryption.

correct, C: <https://learn.microsoft.com/en-us/sql/t-sql/statements/alter-certificate-transact-sql?view=sql-server-ver16#b-changing-the-password-that-is-used-to-encrypt-the-private-key>

Question #233

HOTSPOT -

You have a SQL Server on Azure Virtual Machines instance that hosts a 10-TB SQL database named DB1.

You need to identify and repair any physical or logical corruption in DB1. The solution must meet the following requirements:

- ⇒ Minimize how long it takes to complete the procedure.
- ⇒ Minimize data loss.

How should you complete the command? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

DBCC CHECK [DB1],) WITH

NOINDEX
REPAIR_ALLOW_DATA_LOSS
REPAIR_FAST
REPAIR_REBUILD

EXTENDED_LOGICAL_CHECKS;
PHYSICAL_ONLY;
TABLOCK;

Explanation

Correct Answer:

Answer Area

DBCC CHECK [DB1],) WITH

NOINDEX
REPAIR_ALLOW_DATA_LOSS
REPAIR_FAST
REPAIR_REBUILD

EXTENDED_LOGICAL_CHECKS;
PHYSICAL_ONLY;
TABLOCK;

Box 1: REPAIR_REBUILD -

REPAIR_REBUILD -

Performs repairs that have no possibility of data loss. This option may include quick repairs, such as repairing missing rows in nonclustered indexes, and more time-consuming repairs, such as rebuilding an index.

Box 2: PHYSICAL_ONLY -

PHYSICAL_ONLY -

Limits the checking to the integrity of the physical structure of the page and record headers and the allocation consistency of the database. This check is designed to provide a small overhead check of the physical consistency of the database, but it can also detect torn pages, checksum failures, and common hardware failures that can compromise a user's data.

Incorrect:

TABLOCK -

Causes DBCC CHECKDB to obtain locks instead of using an internal database snapshot. This includes a short-term exclusive (X) lock on the database.

TABLOCK will cause DBCC CHECKDB to run faster on a database under heavy load, but will decrease the concurrency available on the database while DBCC CHECKDB is running.

EXTENDED_LOGICAL_CHECKS -

If the compatibility level is 100 (SQL Server 2008) or higher, performs logical consistency checks on an indexed view, XML indexes, and spatial indexes, where present.

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql>

Community Discussion

they are different, the key in this question: ↪ Minimize how long it takes to complete the procedure. (physical only) ↪ Minimize data loss (Repair_Rebuild) So I think the answer is correct with those 2 requirements

they are different, the key in this question: ↪ Minimize how long it takes to complete the procedure. (physical only) ↪ Minimize data loss (Repair_Rebuild) So I think the answer is correct with those 2 requirements

The answer is correct.

NOINDEX - only check, no repair
EXTENDED_LOGICAL_CHECKS - time-consuming TABLOCK - lock the whole table, time-consuming

NOINDEX - only check, no repair
EXTENDED_LOGICAL_CHECKS - time-consuming TABLOCK - lock the whole table, time-consuming

Question #234

HOTSPOT -

You have an Azure SQL database named DB1.

You need to identify how much unused space in megabytes was allocated to DB1.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
SELECT SUM(size/ - CAST(FILEPROPERTY(name, 'SpaceUsed') AS int)/128.0)
       AS DatabaseDataSpaceAllocatedUnusedInMB
    FROM [ ] [ ]
      sys.database_files
      sys.resource_stats
      sys.dm_db_resource_stats
   GROUP BY type_desc
   HAVING type_desc = 'ROWS';
```

Explanation

Correct Answer:

Answer Area

```
SELECT SUM(size/ - CAST(FILEPROPERTY(name, 'SpaceUsed') AS int)/128.0)
       AS DatabaseDataSpaceAllocatedUnusedInMB
    FROM [ ] [ ]
      sys.database_files
      sys.resource_stats
      sys.dm_db_resource_stats
   GROUP BY type_desc
   HAVING type_desc = 'ROWS';
```

Box 1: 128.0 -

-- Connect to database

```
-- Database data space allocated in MB and database data space allocated unused in MB  
SELECT SUM(size/128.0) AS DatabaseDataSpaceAllocatedInMB,  
SUM(size/128.0 - CAST(FILEPROPERTY(name, 'SpaceUsed') AS int)/128.0) AS  
DatabaseDataSpaceAllocatedUnusedInMB  
  
FROM sys.database_files -  
  
GROUP BY type_desc -  
HAVING type_desc = 'ROWS'
```

Box 2: sys.database_files -

Reference:

<https://techcommunity.microsoft.com/t5/azure-database-support-blog/how-to-get-azure-sql-database-size/ba-p/369189>

Community Discussion

Correct <https://learn.microsoft.com/en-us/azure/azure-sql/database/file-space-manage?view=azuresql>

Question #235

HOTSPOT -

You have an Azure SQL database.

You need to identify whether a delayed query execution is associated to a RESOURCE_SEMAPHORE wait.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
SELECT [▼]  
    wait_type  
    context_info  
    wait_resource  
  
    SUM(wait_time) AS total_wait_time_ms  
  
FROM [▼] AS dmv1  
    sys.dm_exec_requests  
    sys.dm_exec_connections  
    sys.dm_db_partition_stats  
  
JOIN svr.dm_exec_sessions AS sess  
    ON dmv1.session_id = sess.session_id  
WHERE is_user_process = 1  
GROUP BY TARGET1  
ORDER BY SUM(wait_time) DESC;
```

Explanation

Correct Answer:

Answer Area

```
SELECT
    wait_type
    context_info
    wait_resource
        SUM(wait_time) AS total_wait_time_ms
FROM
    sys.dm_exec_requests
    sys.dm_exec_connections
    sys.dm_db_partition_stats
JOIN svr.dm_exec_sessions AS sess
    ON dmv1.session_id = sess.session_id
WHERE is_user_process = 1
GROUP BY TARGET1
ORDER BY SUM(wait_time) DESC;
```

Box 1: wait_type -

Determine if a RESOURCE_SEMAHPORE wait is a top wait

Use the following query to determine if a RESOURCE_SEMAHPORE wait is a top wait

SELECT wait_type,

SUM(wait_time) AS total_wait_time_ms

FROM sys.dm_exec_requests AS req

JOIN sys.dm_exec_sessions AS sess

ON req.session_id = sess.session_id

WHERE is_user_process = 1 -

GROUP BY wait_type -

ORDER BY SUM(wait_time) DESC;

Box 2: sys.dm_exec_requests -

Use the sys.dm_exec_requests or sys.dm_os_waiting_tasks to see the wait_type and wait_time.

Azure SQL RESOURCE_SEMAPHORE wait "wait_time" is_user_process

Community Discussion

FYI, the answer is correct however the Group By is incorrect, it should be wait_type not TARGET1 unless in the select you add the alias.

Correct https://www.sqlshack.com/sql-server-performance-tuning-resource_semaphore-waits/

Question #236

You have an Azure subscription that contains 50 instances of SQL Server on Azure Virtual Machines. The instances host 500 Azure SQL databases.

You need to ensure that all the databases have the same configuration. The solution must meet the following requirements:

- ⇒ Auditing must be enabled.
- ⇒ Azure Defender must be enabled.
- ⇒ Public network access must be disabled.
- ⇒ Administrative effort must be minimized.

Which two resources should you create in the subscription? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) an Azure Automation runbook
- B) an Azure Policy initiative (Correct Answer)**
- C) an Azure Policy assignment
- D) an Azure Automation account
- E) an Azure Policy definition (Correct Answer)**

Explanation

Correct Answer:

BE

Community Discussion

Answer is Correct. Ref: <https://techcommunity.microsoft.com/t5/itops-talk-blog/azure-policy-initiatives-vs-azure-policies-when-should-i-use-one/ba-p/1229167>

B. an Azure Policy initiative E. an Azure Policy definition

Key phrase; "Which two resources should you create"

and what about Azure Automation account and Azure Automation runbook?

It's recommended by the Product group to use initiatives even for a single policy because once an initiative is assigned/created then any additional policy definitions added to the initiative become part of the assignment which would simplify managing policies. Thanks

Question #237

You have an instance of SQL Server on Azure Virtual Machine named SQL1. You need to monitor SQL1 and query the metrics by using Kusto query language. The solution must minimize administrative effort.

Where should you store the metrics?

- A) Azure Event Hubs
- B) a Log Analytics workspace
- C) Azure SQL Database (Correct Answer)**
- D) an Azure Blob storage container

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: B

K language is for Log Analytics

Should be B. Kusto language is used in Log Analytics

Selected Answer: B

K in Log Analytics only

The Answer is definitely B. KQL belongs in Azure Log Analytics.

Correct answer is B. <https://learn.microsoft.com/en-us/azure/azure-monitor/logs/log-query-overview>

Question #238

DRAG DROP -

You have a resource group named App1Dev that contains an Azure SQL Database server named DevServer1. DevServer1 contains an Azure SQL Database instance named DB1. The schema and permissions for DB1 are saved in a Microsoft SQL Server Data Tools (SSDT) database project. You need to populate a new resource group named App1Test with the DB1 database and an Azure SQL server named TestServer1. The resources in App1Test must have the same configurations as the resources in App1 Dev. 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.

You need to populate a new resource group named App1Test with the DB1 database and an Azure SQL server named TestServer1. The resources in App1Test must have the same configurations as the resources in App1 Dev. 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.

Select and Place:

Actions

- Add IP addresses to the firewall.
- Change the Active Directory Admin on TestServer1.
- From the database project, deploy the database schema and permissions.
- Change the server name and related variables in the templates.
- From the Azure portal, deploy the templates.
- From the Azure portal, export the Azure Resource Manager templates.

Answer Area

Explanation

Correct Answer:

Actions

- Add IP addresses to the firewall.
- Change the Active Directory Admin on TestServer1.
- From the database project, deploy the database schema and permissions.
- Change the server name and related variables in the templates.
- From the Azure portal, deploy the templates.
- From the Azure portal, export the Azure Resource Manager templates.

Answer Area

- From the Azure portal, export the Azure Resource Manager templates.
- Change the server name and related variables in the templates.
- From the Azure portal, deploy the templates.
- From the database project, deploy the database schema and permissions.



Community Discussion

correct

1. From Azure export ARM templates;
2. change the server name and related variables in the template;
3. Deploy ARM templates;
4. From database project deploy the database schema and permissions.

Question #239

DRAG DROP -

You have two instances of SQL Server on Azure Virtual Machines named VM1 and VM2. VM1 hosts a database named db1.

You plan to create a database availability group (DAG) for db1. The solution must use certificate authentication between VM1 and VM2.

You need to configure authentication for the outbound connections of VM1.

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:

Actions	Answer Area
From the master database, run CREATE MASTER KEY ENCRYPTION BY PASSWORD.	
From db1, run CREATE ENDPOINT.	
From db1, run CREATE CERTIFICATE.	
From the master database, run CREATE ENDPOINT.	
From the master database, run CREATE CERTIFICATE.	

Explanation

Correct Answer:

Actions	Answer Area
From the master database, run CREATE MASTER KEY ENCRYPTION BY PASSWORD.	From the master database, run CREATE MASTER KEY ENCRYPTION BY PASSWORD.
From db1, run CREATE ENDPOINT.	
From db1, run CREATE CERTIFICATE.	From the master database, run CREATE CERTIFICATE.
From the master database, run CREATE ENDPOINT.	
From the master database, run CREATE CERTIFICATE.	From the master database, run CREATE ENDPOINT.

Community Discussion

Answer is correct.

master key, certificate, endpoint <https://sqlmastersconsulting.com.au/SQL-Server-Blog/configuring-availability-groups-to-use-certificates/>

<https://learn.microsoft.com/en-us/sql/database-engine/database-mirroring/the-database-mirroring-endpoint-sql-server?view=sql-server-ver16>

<https://learn.microsoft.com/en-us/sql/database-engine/database-mirroring/database-mirroring-use-certificates-for-outbound-connections?view=sql-server-ver16>

<https://learn.microsoft.com/en-us/sql/database-engine/database-mirroring/database-mirroring-use-certificates-for-outbound-connections?view=sql-server-ver16>

Question #240

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Azure region
VM1	Azure virtual machine	West US 2
MI1	Azure SQL Managed Instance	East US

You need to configure a connection between VM1 and MI1. The solution must meet the following requirements:

- ⇒ The connection must be encrypted.
- ⇒ Network latency must be minimized.

What should you implement?

- A) a site-to-site VPN
- B) virtual network peering

C) private endpoints (Correct Answer)

- D) service endpoints

Explanation

Correct Answer:

C

Community Discussion

B is the answer

Selected Answer: C

C. private endpoints

I think the answer is correct because using Virtual network peering is without encryption. Virtual network peering No public Internet, gateways, or encryption is required in the communication between the virtual networks. <https://learn.microsoft.com/en-us/azure/virtual-network/virtual-network-peering-overview>

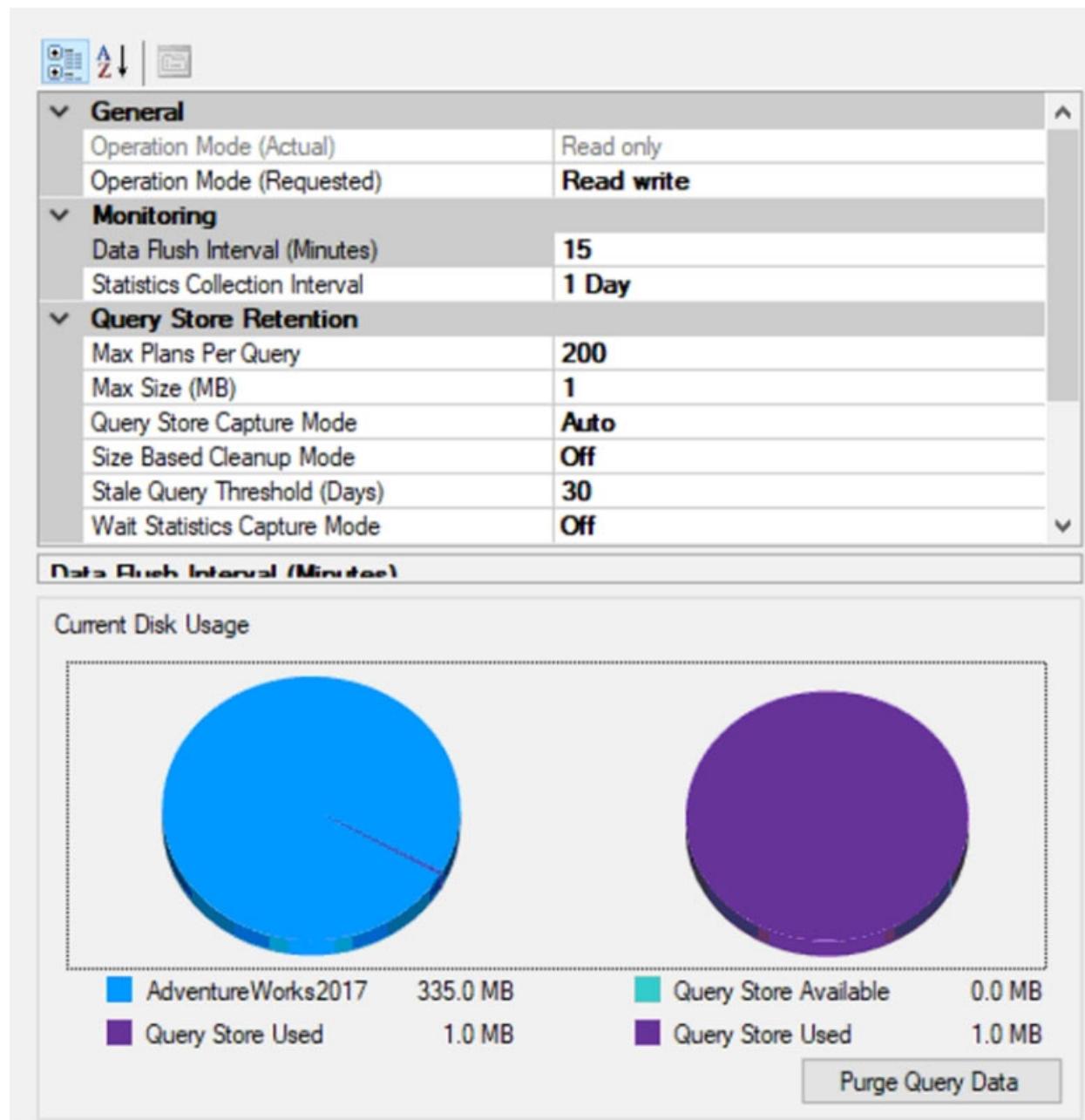
Answer is correct: <https://learn.microsoft.com/en-us/azure/private-link/private-endpoint-overview>

Well, how about the encryption then? Private Endpoint is just some sort of network interface allowing connection between resources. But no other answer looks like correct too, weird question.

Question #241

HOTSPOT -

You have a database on a SQL Server on Azure Virtual Machines instance. The current state of Query Store for the database is shown in the following exhibit.

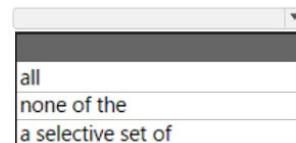


Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

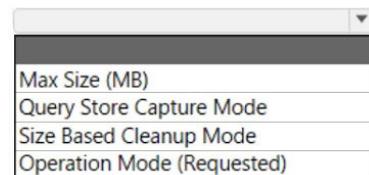
NOTE: Each correct selection is worth one point.

Hot Area:

Query Store will retain [answer choice] queries for evaluation.



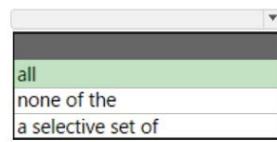
To change Operation Mode (Actual) to Read write without losing any data, you must modify the [answer choice] setting.



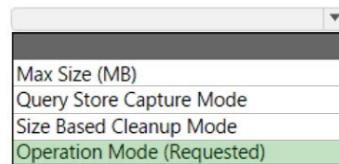
Explanation

Correct Answer:

Query Store will retain [answer choice] queries for evaluation.



To change Operation Mode (Actual) to Read write without losing any data, you must modify the [answer choice] setting.



Community Discussion

The right answer is: none of the Max Size (MB) The first answer is "none of the" because the Operation Mode (actual) is "Read only" so it is not retaining any query for evaluation due to the Query Store Available is 0.0 MB. When the actual state is read-only, use the readonly_reason column to determine the root cause. Typically, you find that Query Store transitioned to read-only mode because the size quota was exceeded. In that case, the readonly_reason is set to 65536 Consider the following steps to switch Query Store to read-write mode and activate data collection: * Increase the maximum storage size by using the MAX_STORAGE_SIZE_MB option of ALTER DATABASE or * Clean up Query Store data <https://learn.microsoft.com/en-us/sql/relational-databases/performance/best-practice-with-the-query-store?view=sql-server-ver16#Verify>

The right answer should be: all Max Size (MB) If SQL Server Query Store is in read-only mode, it retains all the queries for evaluation. The purpose of the read-only mode is to

prevent any modification to the data in the Query Store. However, it still allows all the read operations, including the ability to retrieve and analyze the stored queries. The Query Store is a feature introduced in SQL Server 2016, which captures a history of queries and their execution statistics. It provides the ability to monitor and evaluate query performance, identify query regressions, and optimize queries. When the Query Store is set to read-only mode, it does not accept any modifications, but it still retains all the queries that were executed on the server.

The right answer should be: all Max Size (MB) If SQL Server Query Store is in read-only mode, it retains all the queries for evaluation. The purpose of the read-only mode is to prevent any modification to the data in the Query Store. However, it still allows all the read operations, including the ability to retrieve and analyze the stored queries. The Query Store is a feature introduced in SQL Server 2016, which captures a history of queries and their execution statistics. It provides the ability to monitor and evaluate query performance, identify query regressions, and optimize queries. When the Query Store is set to read-only mode, it does not accept any modifications, but it still retains all the queries that were executed on the server.

It depends on the interpretation of "will retain" * If "will retain" means to keep the existing queries then the answer would be different * If "will retain" means to keep the new (most recent) queries then the answer is "none of the". In my opinion, it refers to capture new queries, and yours?

It depends on the interpretation of "will retain" * If "will retain" means to keep the existing queries then the answer would be different * If "will retain" means to keep the new (most recent) queries then the answer is "none of the". In my opinion, it refers to capture new queries, and yours?

Question #242

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪ Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

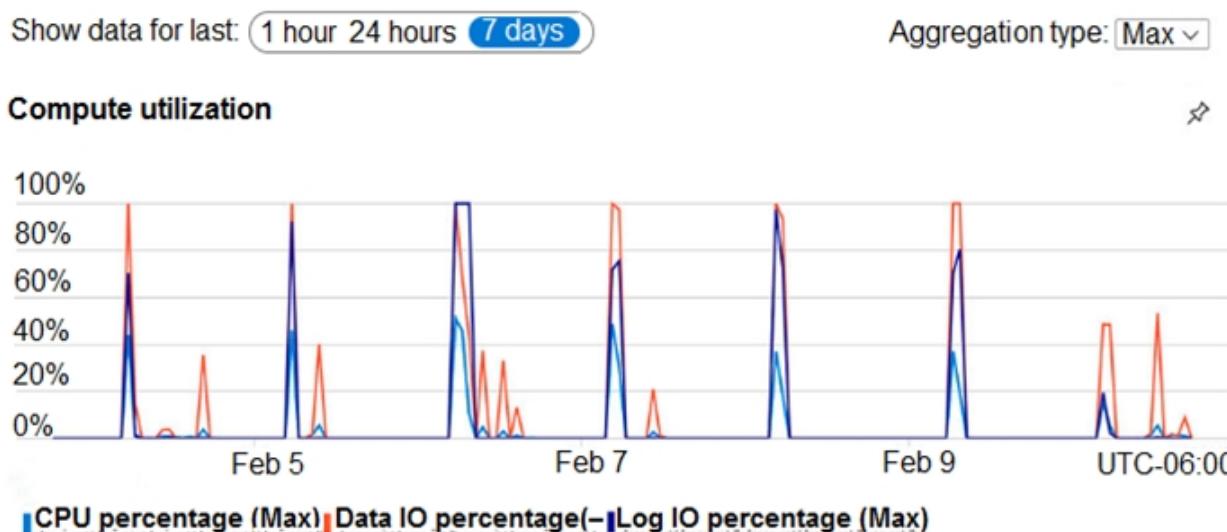
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

[Check access](#) [Role assignments](#) [Deny assignments](#) [Classic administrators](#) [Roles](#)

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription [\(i\)](#)

15 **2000**

Name [\(i\)](#) Type [\(i\)](#) Role [\(i\)](#) Scope [\(i\)](#)

Search by name or email

Group by [\(i\)](#)

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
Contributor			
<input type="checkbox"/>  DBAGroup1	Group	Contributor (i)	This resource
SQL DB Contributor			
<input type="checkbox"/>  DBAGroup2	Group	SQL DB Contributor (i)	This resource

Question What should you use to migrate the PostgreSQL database?

- A) Azure Data Box
- B) AzCopy
- C) Azure Database Migration Service (Correct Answer)**
- D) Azure Site Recovery

Explanation

Correct Answer:

C

Database Migration Service is a fully managed service designed to enable seamless migrations from multiple database sources to Azure data platforms with minimal downtime (online migrations).

You can use Azure Database Migration Service to migrate the databases from an on-premises PostgreSQL instance to Azure Database for PostgreSQL with minimal downtime to the application.

Note: The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Downtime during the PostgreSQL database migration must be minimized.

Reference:

<https://docs.microsoft.com/en-us/azure/dms/dms-overview>

<https://docs.microsoft.com/en-us/azure/dms/tutorial-postgresql-azure-postgresql-online-portal>

Community Discussion

answer is correct. because: Downtime during the PostgreSQL database migration must be minimized. Contoso has a 10-Gb ExpressRoute connection to Azure.

If you're migrating 50TB to Azure, you should use Azure Data Box: <https://learn.microsoft.com/en-us/azure/databox/data-box-overview>

Answer correct.

Selected Answer: C

Definitely C. See @amazonalex's explanation

Question #243

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the

next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.

Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

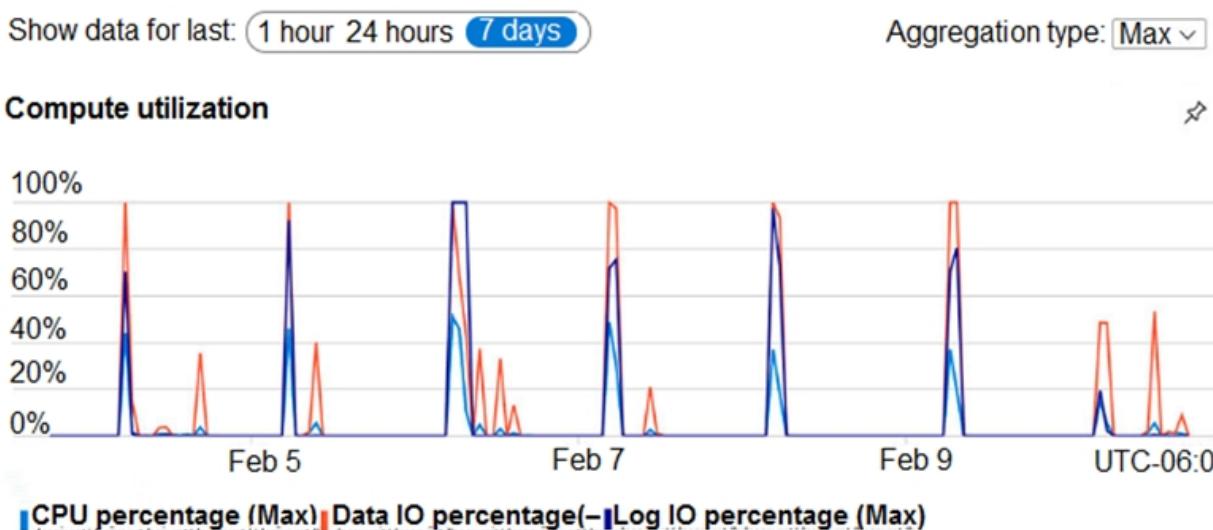
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

[Check access](#) [Role assignments](#) [Deny assignments](#) [Classic administrators](#) [Roles](#)

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription [\(1\)](#)

15 **2000**

Name [\(1\)](#) Type [\(1\)](#) Role [\(1\)](#) Scope [\(1\)](#)

Search by name or email

Group by [\(1\)](#) Role

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
<input type="checkbox"/> DB DBAGroup1	Group	Contributor (1)	This resource
<input type="checkbox"/> DB DBAGroup2	Group	SQL DB Contributor (1)	This resource

Question You need to implement a solution to notify the administrators. The solution must meet the monitoring requirements.

What should you do?

- A) Create an Azure Monitor alert rule that has a static threshold and assign the alert rule to an action group.
- B) Add a diagnostic setting that logs QueryStoreRuntimeStatistics and streams to an Azure event hub.
- C) Add a diagnostic setting that logs Timeouts and streams to an Azure event hub.

D) Create an Azure Monitor alert rule that has a dynamic threshold and assign the alert rule to an action group. (Correct Answer)

Explanation

Correct Answer:

D

Notify administrators when a PaaS database has a higher than average CPU usage. With Dynamic Thresholds, we use a unique ML technology to identify the patterns and come up with a single alert rule that has the right thresholds and accounts for seasonality patterns such as hourly, daily, or weekly.

Reference:

<https://azure.microsoft.com/en-gb/blog/announcing-azure-monitor-aiops-alerts-with-dynamic-thresholds/>

Community Discussion

I think why don't you comment anything meaningful instead this sentence

I think why don't you comment anything meaningful instead this sentence

Answer is correct

it looks good, what do you think?

Selected Answer: D

D is correct

Question #244

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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 -

Requirements -

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

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. Question

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.

Select and Place:

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`.

**Explanation**

Correct Answer:

Actions

Create a SQL Server Agent job.

Publish the runbook.

Run `sp_add_jobserver`.

Answer Area

Create an Azure Automation account.

Import the SqlServer module.

Create a runbook that runs a PowerShell script.

Create and configure a schedule.



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

1. Create Azure automation account (Step 1)

2. Import SQLServer 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"

The screenshot shows two windows side-by-side. The left window is titled 'Add Runbook' and lists 'Quick Create' and 'Create a new runbook' options. The right window is titled 'Runbook' and shows the configuration for a new runbook named 'SqlMaintenance' of type 'PowerShell'. The 'Description' field contains a single character 'r'.

5. Schedule task (Step 4)

Steps:

1. Click on Schedules
2. Click on "Add a schedule" and follow the instructions to choose existing schedule or create a new schedule.

Reference:

<https://techcommunity.microsoft.com/t5/azure-database-support-blog/automating-azure-sql-db-index-and-statistics-maintenance-using/ba-p/368974>

Community Discussion

I think you're wrong, because before creating and setting up a schedule, we have to publish the runbook. 1. Create an Azure Automation account; 2. Import the SqlServer module 3. Create a runbook that runs a PowerShell script; 4. Publish the runbook.

runbook needs to be published before you can run it: When you create or import a new runbook, you have to publish it before you can run it. Each runbook in Azure Automation has a Draft version and a Published version. Only the Published version is available to be run, and only the Draft version can be edited. The Published version is unaffected by any changes to the Draft version. When the Draft version should be made available, you publish it, overwriting the current Published version with the Draft version. <https://learn.microsoft.com/en-us/azure/automation/manage-runbooks>

You are wrong. Create runbook includes publish.

You are wrong. Create runbook includes publish.

Looks correct.

Question #245

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question You need to provide an implementation plan to configure data retention for ResearchDB1. The solution must meet the security and compliance requirements.

What should you include in the plan?

- A) Configure the Deleted databases settings for ResearchSrv01.
- B) Deploy and configure an Azure Backup server.
- C) Configure the Advanced Data Security settings for ResearchDB1.

D) Configure the Manage Backups settings for ResearchSrv01. (Correct Answer)

Explanation

Correct Answer:

D

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/long-term-backup-retention-configure>

Community Discussion

it looks good, what do you think?

Selected Answer: D

D is correct. You can configure SQL Database to retain automated backups for a period longer than the retention period for your service tier. In the Azure portal, navigate to your server and then select Backups. Select the Retention policies tab to modify your backup retention settings.

Selected Answer: D

Correct answer is D:

Question #246

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question HOTSPOT -

You need to recommend a configuration for ManufacturingSQLDb1 after the migration to Azure. The solution must meet the business requirements.

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Quorum mode:

Node majority with witness
Node majority
No majority

Azure resource for the availability group listener:

Azure Application Gateway
Azure Basic Load Balancer
Azure Standard Load Balancer

Explanation

Correct Answer:

Answer Area

Quorum mode:

Node majority with witness
Node majority
No majority

Azure resource for the availability group listener:

Azure Application Gateway
Azure Basic Load Balancer
Azure Standard Load Balancer

Box 1: Node majority with witness

As a general rule when you configure a quorum, the voting elements in the cluster should be an odd number. Therefore, if the cluster contains an even number of voting nodes, you should configure a disk witness or a file share witness.

Note: Mode: Node majority with witness (disk or file share)

Nodes have votes. In addition, a quorum witness has a vote. The cluster quorum is the majority of voting nodes in the active cluster membership plus a witness vote. A quorum witness can be a designated disk witness or a designated file share witness.

Box 2: Azure Standard Load Balancer

Microsoft guarantees that a Load Balanced Endpoint using Azure Standard Load Balancer, serving two or more Healthy Virtual Machine Instances, will be available 99.99% of the time.

Scenario: Business Requirements -

Litware identifies business requirements include: meet an SLA of 99.99% availability for all Azure deployments.

Incorrect Answers:

Basic Balancer: No SLA is provided for Basic Load Balancer.

Note: There are two main options for setting up your listener: external (public) or internal. The external (public) listener uses an internet facing load balancer and is associated with a public Virtual IP (VIP) that is accessible over the internet. An internal listener uses an internal load balancer and only supports clients within the same Virtual Network.

Reference:

<https://technet.microsoft.com/windows-server-docs/failover-clustering/deploy-cloud-witness> https://azure.microsoft.com/en-us/support/legal/sla/load-balancer/v1_0/

Community Discussion

Box 2: Azure Standard Load Balancer Microsoft guarantees that a Load Balanced Endpoint using Azure Standard Load Balancer, serving two or more Healthy Virtual Machine Instances, will be available 99.99% of the time. Scenario: Business Requirements Litware identifies business requirements include: meet an SLA of 99.99% availability for all Azure deployments. Incorrect Answers: Basic Balancer: No SLA is provided for Basic Load Balancer. Note: There are two main options for setting up your listener: external (public) or internal. The external (public) listener uses an internet facing load balancer and is associated with a public Virtual IP (VIP) that is accessible over the internet. An internal listener uses an internal load balancer and only supports clients within the same Virtual Network. Reference: <https://technet.microsoft.com/windows-server-docs/failover-clustering/deploy-cloud-witness> https://azure.microsoft.com/en-us/support/legal/sla/load-balancer/v1_0/

Standard Balancer is right option, they don't want public access for Azure machines, Basic load balancer is open to the internet by default

Answer is correct: Quorum mode: Node majority with witness Availability Group: Standard LB

Quorum mode: Node majority with witness Availability Group: Standard LB

No SLA is provided for Basic Load Balancer https://azure.microsoft.com/en-us/support/legal/sla/load-balancer/v1_0/

Question #247

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question

What should you do after a failover of SalesSQLDb1 to ensure that the database remains accessible to SalesSQLDb1App1?

A) Configure SalesSQLDb1 as writable.

B) Update the connection strings of SalesSQLDb1App1. (Correct Answer)

C) Update the firewall rules of SalesSQLDb1.

D) Update the users in SalesSQLDb1.

Explanation

Correct Answer:

B

Scenario: SalesSQLDb1 uses database firewall rules and contained database users.

Incorrect:

Not C: When using public network access for connecting to the database, we recommend using database-level IP firewall rules for geo-replicated databases.

These rules are replicated with the database, which ensures that all geo-secondaries have the same IP firewall rules as the primary. This approach eliminates the need for customers to manually configure and maintain firewall rules on servers hosting the primary and secondary databases.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview#keeping-credentials-and-firewall-rules-in-sync>

Community Discussion

I say update connection strings. It is a sort of given (as it's recommended by Microsoft) that firewall rules be the same for master & secondary. <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview#keeping-credentials-and-firewall-rules-in-sync>

application connection also need to update as Geo replication is being used, not automatic failover groups where you can have a listener

I think you are right, wouldn't the firewall rules be there already, I would say update connection string is the correct answer

Selected Answer: B

B is the correct answer. As per the case study scenario the database already has database -level firewall rules and the database is in geo-replication. No need to make changes in the firewall rules as they get replicated to the secondary replica.

Selected Answer: B

<https://azure.microsoft.com/en-us/blog/azure-sql-database-now-supports-transparent-geographic-failover-of-multiple-databases-featuring-automatic-activation/>

Question #248

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪

Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

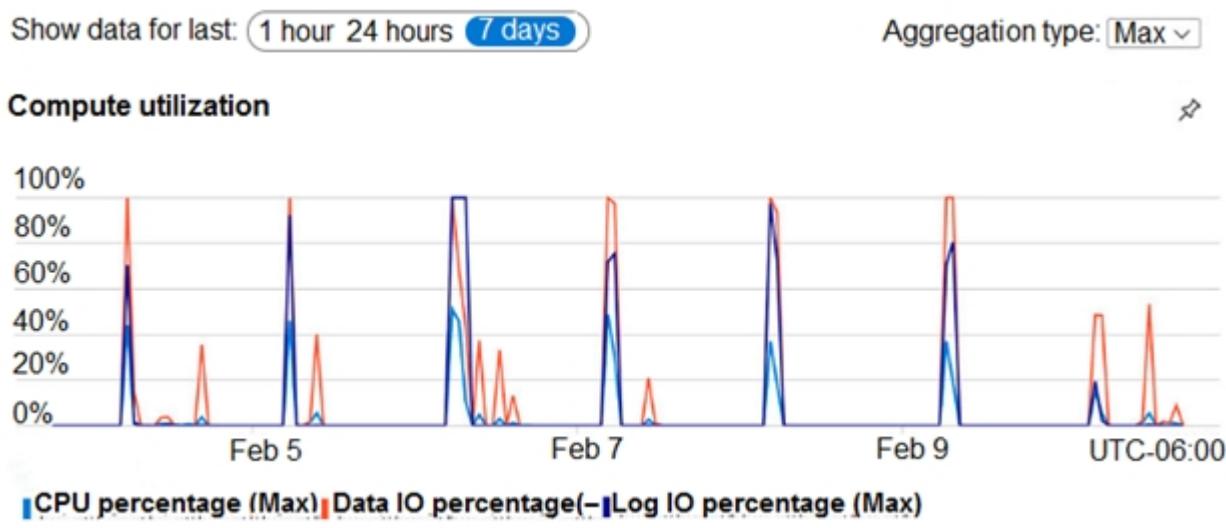
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

The screenshot shows the Azure portal's 'Role assignments' section. At the top, there are buttons for 'Add', 'Edit columns', 'Refresh', 'Remove', and 'Got feedback?'. Below these are tabs for 'Check access', 'Role assignments' (which is selected), 'Deny assignments', 'Classic administrators', and 'Roles'. A message below the tabs says 'Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments.' with a 'Learn more' link.

Number of role assignments for this subscription: 15 (highlighted in blue)

Total Role Assignments: 2000

Filtering options include:

- Name: Search by name or email
- Type: Groups (selected)
- Role: 2 selected
- Scope: All scopes
- Group by: Role (selected)

A message box indicates: **i Showing a filtered set of results. Total number of role assignments: 15**

Table of 2 items (2 Groups):

<input type="checkbox"/> Name	Type	Role	Scope
<input type="checkbox"/> DB DBAGroup1	Group	Contributor	This resource
<input type="checkbox"/> DB SQL DB Contributor	Group	SQL DB Contributor	This resource
<input type="checkbox"/> DB DBAGroup2	Group	SQL DB Contributor	This resource

Question What should you implement to meet the disaster recovery requirements for the PaaS solution?

- A) Availability Zones
- B) failover groups (Correct Answer)**
- C) Always On availability groups
- D) geo-replication

Explanation

Correct Answer:

B

Scenario: In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover. The auto-failover groups feature allows you to manage the replication and failover of a group of databases on a server or all databases in a managed instance to another region. It is a declarative abstraction on top of the existing active geo-replication feature, designed to simplify deployment and management of geo-replicated databases at scale. You can initiate failover manually or you can delegate it to the Azure service based on a user-defined policy.

The latter option allows you to automatically recover multiple related databases in a

secondary region after a catastrophic failure or other unplanned event that results in full or partial loss of the SQL Database or SQL Managed Instance availability in the primary region.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-overview>

Community Discussion

Availability zones (e.g. different datacenters in same region) will not help. They want the DB to be available in case there is a regional event.. it's a PaaS not IaaS so it can't be Always On Availability Group. Geo-replication would mean new connection strings so access would not be restored quickly. So it must be failover group.

Availability zones (e.g. different datacenters in same region) will not help. They want the DB to be available in case there is a regional event.. it's a PaaS not IaaS so it can't be Always On Availability Group. Geo-replication would mean new connection strings so access would not be restored quickly. So it must be failover group.

Selected Answer: B

Geo-Replication does not support Auto-Failover

Selected Answer: B

Failover groups supports Automatic failover.

Selected Answer: B

Failover groups is correct answer

Question #249

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question You need to implement authentication for ResearchDB1. The solution must meet the security and compliance requirements.

What should you run as part of the implementation?

- A) CREATE LOGIN and the FROM WINDOWS clause
- B) CREATE USER and the FROM CERTIFICATE clause
- C) CREATE USER and the FROM LOGIN clause
- D) CREATE USER and the ASYMMETRIC KEY clause

E) CREATE USER and the FROM EXTERNAL PROVIDER clause (Correct Answer)

Explanation

Correct Answer:

E

Scenario: Authenticate database users by using Active Directory credentials.

(Create a new Azure SQL database named ResearchDB1 on a logical server named ResearchSrv01.)

Authenticate the user in SQL Database or SQL Data Warehouse based on an Azure Active Directory user:

CREATE USER [\[email protected\]](#) FROM EXTERNAL PROVIDER;

Reference:

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

Community Discussion

Has to be "E", as it's Azure SQL Database and the requirements are "Authenticate database users by using Active Directory credentials".

Remember this phrase: "Authenticate database users by using Active Directory credentials."

Selected Answer: E

Authenticate database users by using Active Directory credentials. CREATE USER [user_name] FROM EXTERNAL PROVIDER

The provided answer is correct

Selected Answer: E

E is the correct answer

Question #250

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question 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.

Hot Area:

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

Correct 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

Box 1: Premium 4-VCore -

Scenario:

An on-premises named SERVER1 hosts an instance of Microsoft SQL Server 2012 and two 1-TB databases.

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.

Incorrect Answers:

The Standard pricing tier suits most small- to medium- business workloads, but it supports offline migration only.

Box 2: A virtual network that has service endpoints

Scenario: The primary datacenter has an ExpressRoute connection that uses both Microsoft peering and private peering.

You need to create a Microsoft Azure Virtual Network for the Azure Database Migration Service by using the Azure Resource Manager deployment model, which provides site-to-site connectivity to your on-premises source servers by using either ExpressRoute or VPN.

Note: During virtual network setup, if you use ExpressRoute with network peering to Microsoft, add the following service endpoints to the subnet in which the service will be provisioned:

Target database endpoint (for example, SQL endpoint, Cosmos DB endpoint, and so on)

Storage endpoint -

Service bus endpoint -

This configuration is necessary because Azure Database Migration Service lacks internet connectivity.

Reference:

<https://azure.microsoft.com/pricing/details/database-migration/> <https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-azure-sql-online>

Community Discussion

Premium 4-vCore A VPN gateway

Answer is correct but selection is wrong

1- A main office in Boston. The main office hosts a sales department 2- The main office hosts a sales department and the primary datacenter for the company. 3- 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. 4- 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.

<https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-azure-sql> Link Says :

During virtual network setup, if you use ExpressRoute with network peering to Microsoft, add the following service endpoints to the subnet in which the service will be provisioned: Target database endpoint (for example, SQL endpoint, Cosmos DB endpoint, and so on) I think correct answers are : Premium - 4vCore (Premium supports online migration, but Standard not support) A virtual network that has service endpoint

Explanation in the answer and what is selected as the answer in the visuals are not the same.

The sales department is in the main office/primary datacenter which has an ExpressRoute to Azure. Access to the SERVER1 Azure SQL Database would be by ExpressRoute. Should this not be Virtual Network with service endpoints?

Question #251

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question 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.

Hot Area:

Answer Area

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

Correct Answer:

Answer Area

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

Box 1: Vcore -

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.

Reference:

<https://azure.microsoft.com/es-es/blog/a-flexible-new-way-to-purchase-azure-sql-database/> <https://docs.microsoft.com/en-us/azure/azure-sql/database/elastic-pool-overview> <https://docs.microsoft.com/en-us/azure/azure-sql/database/reserved-capacity-overview>

Community Discussion

Hybrid Use Benefits is not supported for DTU

You are right Should be vCore <https://azure.microsoft.com/es-es/blog/a-flexible-new-way-to-purchase-azure-sql-database/>

You are right Should be vCore <https://azure.microsoft.com/es-es/blog/a-flexible-new-way-to-purchase-azure-sql-database/>

It also says: "Azure Hybrid Use Benefits must be leveraged for Azure SQL Database deployments". Doesn't matter if they are new or migrated.

It also says: "Azure Hybrid Use Benefits must be leveraged for Azure SQL Database deployments". Doesn't matter if they are new or migrated.

Question #252

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Contoso, Ltd. is a clothing retailer based in Seattle. The company has 2,000 retail stores across the United States and an emerging online presence.

The network contains an Active Directory forest named contoso.com. The forest is integrated with an Azure Active Directory (Azure AD) tenant named contoso.com. Contoso has an Azure subscription associated to the contoso.com Azure AD tenant.

Existing Environment -

Transactional Data -

Contoso has three years of customer, transaction, operational, sourcing, and

supplier data comprised of 10 billion records stored across multiple on-premises

Microsoft SQL Server servers. The SQL Server instances contain data from various operations systems. The data is loaded into the instances by using SQL Server Integration Services (SSIS) packages.

You estimate that combining all product sales transactions into a company-wide sales transactions dataset will result in a single table that contains 5 billion rows, with one row per transaction.

Most queries targeting the sales transactions data will be used to identify which products were sold in retail stores and which products were sold online during different time periods. Sales transaction data that is older than three years will be removed monthly.

You plan to create a retail store table that will contain the address of each retail store. The table will be approximately 2 MB. Queries for retail store sales will include the retail store addresses.

You plan to create a promotional table that will contain a promotion ID. The promotion ID will be associated to a specific product. The product will be identified by a product ID. The table will be approximately 5 GB.

Streaming Twitter Data -

The ecommerce department at Contoso develops an Azure logic app that captures trending Twitter feeds referencing the company's products and pushes the products to Azure Event Hubs.

Planned Changes and Requirements

Planned Changes -

Contoso plans to implement the following changes:

Load the sales transaction dataset to Azure Synapse Analytics.

Integrate on-premises data stores with Azure Synapse Analytics by using SSIS packages.

Use Azure Synapse Analytics to analyze Twitter feeds to assess customer sentiments about products.

Sales Transaction Dataset Requirements

Contoso identifies the following requirements for the sales transaction dataset: Partition data that contains sales transaction records. Partitions must be designed to provide efficient loads by month. Boundary values must belong to the partition on the right.

Ensure that queries joining and filtering sales transaction records based on product ID complete as quickly as possible.

Implement a surrogate key to account for changes to the retail store addresses.

Ensure that data storage costs and performance are predictable.

Minimize how long it takes to remove old records.

Customer Sentiment Analytics Requirements

Contoso identifies the following requirements for customer sentiment analytics:

Allow Contoso users to use PolyBase in an Azure Synapse Analytics dedicated SQL pool to query the content of the data records that host the Twitter feeds.

Data must be protected by using row-level security (RLS). The users must be authenticated by using their own Azure AD credentials.

Maximize the throughput of ingesting Twitter feeds from Event Hubs to Azure Storage without purchasing additional throughput or capacity units.

Store Twitter feeds in Azure Storage by using Event Hubs Capture. The feeds will be converted into Parquet files.

Ensure that the data store supports Azure AD-based access control down to the object level.

Minimize administrative effort to maintain the Twitter feed data records.

Purge Twitter feed data records that are older than two years.

Data Integration Requirements -

Contoso identifies the following requirements for data integration:

Use an Azure service that leverages the existing SSIS packages to ingest on-premises data into datasets stored in a dedicated SQL pool of Azure Synapse Analytics and transform the data.

Identify a process to ensure that changes to the ingestion and transformation activities can be version-controlled and developed independently by multiple data engineers. Question You need to design a data retention solution for the Twitter feed data records. The solution must meet the customer sentiment analytics requirements.

Which Azure Storage functionality should you include in the solution?

A) time-based retention

B) change feed

C) lifecycle management (Correct Answer)

D) soft delete

Explanation

Correct Answer:

C

The lifecycle management policy lets you:

- ⇒ Delete blobs, blob versions, and blob snapshots at the end of their lifecycles

Scenario:

- ⇒ Purge Twitter feed data records that are older than two years.
- ⇒ Store Twitter feeds in Azure Storage by using Event Hubs Capture. The feeds will be converted into Parquet files.
- ⇒ Minimize administrative effort to maintain the Twitter feed data records.

Incorrect Answers:

A: Time-based retention policy support: Users can set policies to store data for a specified interval. When a time-based retention policy is set, blobs can be created and read, but not modified or deleted. After the retention period has expired, blobs can be deleted but not overwritten.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-lifecycle-management-concepts>

Community Discussion

Selected Answer: C

Answer is correct

Selected Answer: C

The correct answer is Lifecycle management

it looks good, what do you think?

Question #253

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Contoso, Ltd. is a clothing retailer based in Seattle. The company has 2,000 retail stores across the United States and an emerging online presence.

The network contains an Active Directory forest named contoso.com. The forest is integrated with an Azure Active Directory (Azure AD) tenant named contoso.com. Contoso has an Azure subscription associated to the contoso.com Azure AD tenant.

Existing Environment -

Transactional Data -

Contoso has three years of customer, transaction, operational, sourcing, and

supplier data comprised of 10 billion records stored across multiple on-premises

Microsoft SQL Server servers. The SQL Server instances contain data from various operations systems. The data is loaded into the instances by using SQL Server Integration Services (SSIS) packages.

You estimate that combining all product sales transactions into a company-wide sales transactions dataset will result in a single table that contains 5 billion rows, with one row per transaction.

Most queries targeting the sales transactions data will be used to identify which products were sold in retail stores and which products were sold online during different time periods. Sales transaction data that is older than three years will be removed monthly.

You plan to create a retail store table that will contain the address of each retail store. The table will be approximately 2 MB. Queries for retail store sales will include the retail store addresses.

You plan to create a promotional table that will contain a promotion ID. The promotion ID will be associated to a specific product. The product will be identified by a product ID. The table will be approximately 5 GB.

Streaming Twitter Data -

The ecommerce department at Contoso develops an Azure logic app that captures trending Twitter feeds referencing the company's products and pushes the products to Azure Event Hubs.

Planned Changes and Requirements

Planned Changes -

Contoso plans to implement the following changes:

Load the sales transaction dataset to Azure Synapse Analytics.

Integrate on-premises data stores with Azure Synapse Analytics by using SSIS packages.

Use Azure Synapse Analytics to analyze Twitter feeds to assess customer sentiments about products.

Sales Transaction Dataset Requirements

Contoso identifies the following requirements for the sales transaction dataset: Partition data that contains sales transaction records. Partitions must be designed to provide efficient loads by month. Boundary values must belong to the partition on the right.

Ensure that queries joining and filtering sales transaction records based on product ID complete as quickly as possible.

Implement a surrogate key to account for changes to the retail store addresses.

Ensure that data storage costs and performance are predictable.

Minimize how long it takes to remove old records.

Customer Sentiment Analytics Requirements

Contoso identifies the following requirements for customer sentiment analytics:

Allow Contoso users to use PolyBase in an Azure Synapse Analytics dedicated SQL pool to query the content of the data records that host the Twitter feeds.

Data must be protected by using row-level security (RLS). The users must be authenticated by using their own Azure AD credentials.

Maximize the throughput of ingesting Twitter feeds from Event Hubs to Azure Storage without purchasing additional throughput or capacity units.

Store Twitter feeds in Azure Storage by using Event Hubs Capture. The feeds will be converted into Parquet files.

Ensure that the data store supports Azure AD-based access control down to the object level.

-

Minimize administrative effort to maintain the Twitter feed data records.

Purge Twitter feed data records that are older than two years.

Data Integration Requirements -

Contoso identifies the following requirements for data integration:

Use an Azure service that leverages the existing SSIS packages to ingest on-premises data into datasets stored in a dedicated SQL pool of Azure Synapse Analytics and transform the data.

Identify a process to ensure that changes to the ingestion and transformation activities can be version-controlled and developed independently by multiple data engineers. Question You need to implement the surrogate key for the retail store table. The solution must meet the sales transaction dataset requirements.

What should you create?

A) a table that has a FOREIGN KEY constraint

B) a table that has an IDENTITY property (Correct Answer)

C) a user-defined SEQUENCE object

D) a system-versioned temporal table

Explanation

Correct Answer:

B

Scenario: Contoso requirements for the sales transaction dataset include:

⇒ Implement a surrogate key to account for changes to the retail store addresses.

A surrogate key on a table is a column with a unique identifier for each row. The key is not generated from the table data. Data modelers like to create surrogate keys on their tables when they design data warehouse models. You can use the IDENTITY property to achieve this goal simply and effectively without affecting load performance.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-identity>

Community Discussion

Selected Answer: B

"a table the has an IDENTITY property" is the correct answer

it looks good, what do you think?

Question #254

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Contoso, Ltd. is a clothing retailer based in Seattle. The company has 2,000 retail stores across the United States and an emerging online presence.

The network contains an Active Directory forest named contoso.com. The forest is integrated with an Azure Active Directory (Azure AD) tenant named contoso.com. Contoso has an Azure subscription associated to the contoso.com Azure AD tenant.

Existing Environment -

Transactional Data -

Contoso has three years of customer, transaction, operational, sourcing, and

supplier data comprised of 10 billion records stored across multiple on-premises

Microsoft SQL Server servers. The SQL Server instances contain data from various operations systems. The data is loaded into the instances by using SQL Server Integration Services (SSIS) packages.

You estimate that combining all product sales transactions into a company-wide sales transactions dataset will result in a single table that contains 5 billion rows, with one row per transaction.

Most queries targeting the sales transactions data will be used to identify which products were sold in retail stores and which products were sold online during different time periods. Sales transaction data that is older than three years will be removed monthly.

You plan to create a retail store table that will contain the address of each retail store. The table will be approximately 2 MB. Queries for retail store sales will include the retail store addresses.

You plan to create a promotional table that will contain a promotion ID. The promotion ID will be associated to a specific product. The product will be identified by a product ID. The table will be approximately 5 GB.

Streaming Twitter Data -

The ecommerce department at Contoso develops an Azure logic app that captures trending Twitter feeds referencing the company's products and pushes the products to Azure Event Hubs.

Planned Changes and Requirements

Planned Changes -

Contoso plans to implement the following changes:

Load the sales transaction dataset to Azure Synapse Analytics.

Integrate on-premises data stores with Azure Synapse Analytics by using SSIS packages.

Use Azure Synapse Analytics to analyze Twitter feeds to assess customer sentiments about products.

Sales Transaction Dataset Requirements

Contoso identifies the following requirements for the sales transaction dataset: Partition data that contains sales transaction records. Partitions must be designed to provide efficient loads by month. Boundary values must belong to the partition on the right.

Ensure that queries joining and filtering sales transaction records based on product ID complete as quickly as possible.

Implement a surrogate key to account for changes to the retail store addresses.

Ensure that data storage costs and performance are predictable.

Minimize how long it takes to remove old records.

Customer Sentiment Analytics Requirements

Contoso identifies the following requirements for customer sentiment analytics:

Allow Contoso users to use PolyBase in an Azure Synapse Analytics dedicated SQL pool to query the content of the data records that host the Twitter feeds.

Data must be protected by using row-level security (RLS). The users must be authenticated by using their own Azure AD credentials.

Maximize the throughput of ingesting Twitter feeds from Event Hubs to Azure Storage without purchasing additional throughput or capacity units.

Store Twitter feeds in Azure Storage by using Event Hubs Capture. The feeds will be converted into Parquet files.

Ensure that the data store supports Azure AD-based access control down to the object level.

Minimize administrative effort to maintain the Twitter feed data records.

Purge Twitter feed data records that are older than two years.

Data Integration Requirements -

Contoso identifies the following requirements for data integration:

Use an Azure service that leverages the existing SSIS packages to ingest on-premises data into datasets stored in a dedicated SQL pool of Azure Synapse Analytics and transform the data.

Identify a process to ensure that changes to the ingestion and transformation activities can be version-controlled and developed independently by multiple data engineers. Question HOTSPOT -

You need to design an analytical storage solution for the transactional data. The solution must meet the sales transaction dataset requirements.

What should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Table type to store retail store data:

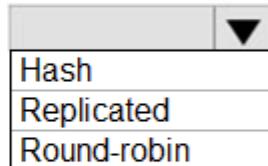
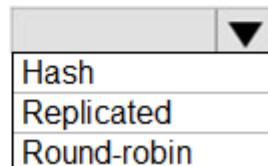


Table type to store promotional data:



Explanation

Correct Answer:

Answer Area

Table type to store retail store data:

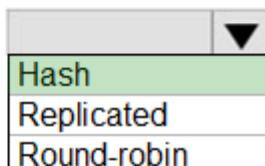
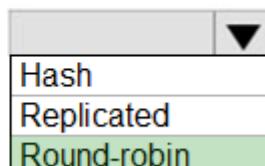


Table type to store promotional data:



Box 1: Hash -

Scenario:

Ensure that queries joining and filtering sales transaction records based on product ID complete as quickly as possible.

A hash distributed table can deliver the highest query performance for joins and aggregations on large tables.

Box 2: Round-robin -

Scenario:

You plan to create a promotional table that will contain a promotion ID. The promotion ID will be associated to a specific product. The product will be identified by a product ID. The table will be approximately 5 GB.

A round-robin table is the most straightforward table to create and delivers fast performance when used as a staging table for loads. These are some scenarios where you should choose Round robin distribution:

- ⇒ When you cannot identify a single key to distribute your data.
- ⇒ If your data doesn't frequently join with data from other tables.
- ⇒ When there are no obvious keys to join.

Incorrect Answers:

Replicated: Replicated tables eliminate the need to transfer data across compute nodes by replicating a full copy of the data of the specified table to each compute node. The best candidates for replicated tables are tables with sizes less than 2 GB compressed and small dimension tables.

Reference:

<https://rajanieshkaushikk.com/2020/09/09/how-to-choose-right-data-distribution-strategy-for-azure-synapse/>

Community Discussion

Replicated Hash Question #4 <https://www.secexams.com/exams/microsoft/dp-203/view/26/>

is part of DP-203? really is't dp-300!

is part of DP-203? really is't dp-300!

Retail Store is only 2 MB so it should be replicated. Promotional table is greater than 2 GB so it should be Hash

DP-203

Question #255

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question

DRAG DROP -

You create all of the tables and views for ResearchDB1.

You need to implement security for ResearchDB1. The solution must meet the security and compliance requirements.

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:

Actions	Answer Area
Run the Always Encrypted wizard.	
Create an Azure Key Vault instance and generate a secret.	
Create an Azure Key Vault instance and configure an access policy.	
Create an Azure AD managed identity.	
Register ResearchApp1 to Azure AD.	

Explanation

Correct Answer:

Actions

Create an Azure Key Vault instance and generate a secret.

Create an Azure AD managed identity.

Answer Area

Register ResearchApp1 to Azure AD.

Create an Azure Key Vault instance and configure an access policy.

Run the Always Encrypted wizard.

Box 1: - Register ResearchApp1 to Azure AD.

Box 2: Create an Azure Key Vault instance and configure an access policy.

Need to configure the key vault with an access policy to enable ResearchApp1 retrieval of the keys.

Box 3: Run the Always Encrypt wizard.

Run the Always Encrypt wizard to encrypt the columns and store the encryption keys in the vault.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/always-encrypted-azure-key-vault-configure?tabs=azure-powershell>

Community Discussion

Answer is correct

Answer looks good. Link to alwaysEncryption is clear. - Register the app in AD - Configure the key vault with an access policy so the app can retrieve the keys - Run alwaysOn wizard to encrypt the columns and store the encryption keys in the vault

Create an Azure Key Vault instance and configure an access policy: This step ensures that you have a secure place to store your encryption keys and that the appropriate access policies are in place. It's essential to have the Key Vault ready before you start configuring encryption for your database. Register ResearchApp1 to Azure AD: This step allows you to authenticate users using Azure Active Directory credentials. Registering the app to Azure AD ensures that you can manage access and permissions effectively. Run the Always Encrypted wizard: This step encrypts the PII data in ResearchDB1 using the keys stored in Azure Key Vault. Having the Key Vault and access policies configured beforehand ensures a smooth encryption process. While reversing steps 1 and 2 might

not cause significant issues, following the recommended order helps maintain a logical and efficient workflow.

Question #256

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question

DRAG DROP -

You need to configure user authentication for the SERVER1 databases. The solution must meet the security and compliance requirements.

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:

Actions	Answer Area
Create a user in the master database	
Modify the Azure SQL server administrator account	
Create contained database users	
Create an Azure AD administrator for the logical server	
Connect to the databases by using an Azure AD account	
Enable the contained database authentication option	 

Explanation

Correct Answer:

Actions	Answer Area
Create a user in the master database	Create an Azure AD administrator for the logical server
Modify the Azure SQL server administrator account	Connect to the databases by using an Azure AD account
	 Create contained database users 
	 
Enable the contained database authentication option	

Scenario: Authenticate database users by using Active Directory credentials.

The configuration steps include the following procedures to configure and use Azure Active Directory authentication.

1. Create and populate Azure AD.
2. Optional: Associate or change the active directory that is currently associated with your Azure Subscription.
3. Create an Azure Active Directory administrator. (Step 1)
4. Connect to the databases using an Azure AD account (the Administrator account that was configured in the previous step). (Step 2)
5. Create contained database users in your database mapped to Azure AD identities. (Step 3)

Reference:
<https://docs.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-configure?tabs=azure-powershell>

Community Discussion

It should be D,E,C - You have to connect to the databases ,with the AD account and then to create contained users . " To create an Azure AD-based contained database user (other than the server administrator that owns the database), connect to the database with an Azure AD identity, as a user with at least the ALTER ANY USER permission. "

After I thought about it, I think you are right: 1- Create an Azure AD Admin. 2- Create contained DB users in your db mapped to Azure AD identities. 3- Connect to your DB by using the Azure AD identities (which we mapped in step 2 to the contained db users). with that said the provided answer has the wrong order for step 2 and 3

After I thought about it, I think you are right: 1- Create an Azure AD Admin. 2- Create contained DB users in your db mapped to Azure AD identities. 3- Connect to your DB by using the Azure AD identities (which we mapped in step 2 to the contained db users). with that said the provided answer has the wrong order for step 2 and 3

After I thought about it, I think you are right: 1- Create an Azure AD Admin. 2- Create contained DB users in your db mapped to Azure AD identities. 3- Connect to your DB by using the Azure AD identities (which we mapped in step 2 to the contained db users). with that said the provided answer has the wrong order for step 2 and 3

After I thought about it, I think you are right: 1- Create an Azure AD Admin. 2- Create contained DB users in your db mapped to Azure AD identities. 3- Connect to your DB by using the Azure AD identities (which we mapped in step 2 to the contained db users). with that said the provided answer has the wrong order for step 2 and 3

Question #257

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪ Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

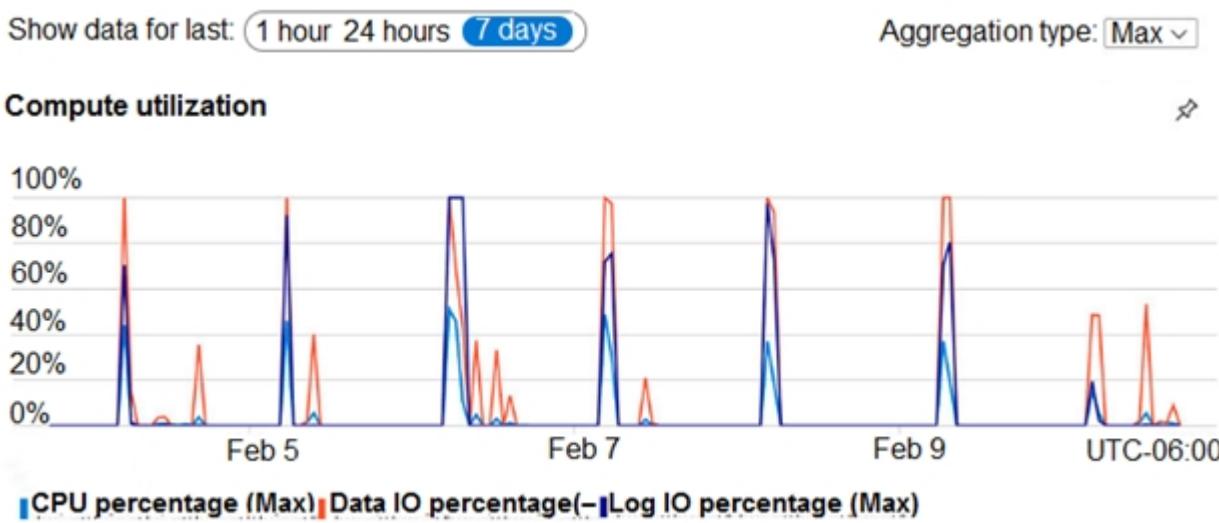
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

Check access **Role assignments** **Deny assignments** **Classic administrators** **Roles**

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription 15 / 2000

Name **Groups** Type **Role** 2 selected Scope **All scopes**

Group by **Role**

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
Contributor <input type="checkbox"/>  DBAGroup1	Group	Contributor	This resource
SQL DB Contributor <input type="checkbox"/>  DBAGroup2	Group	SQL DB Contributor	This resource

Question HOTSPOT -

You are evaluating the role assignments.

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

Statements	Yes	No
DBAGroup1 will be able to sign in to each customer's Azure SQL database by using Azure Data Studio.	<input type="radio"/>	<input type="radio"/>
DBAGroup1 will be able to assign the SQL DB Contributor role to other users.	<input type="radio"/>	<input type="radio"/>
DBAGroup2 will be able to create a new Azure SQL database on each customer's Azure SQL Database server.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements	Yes	No
DBAGroup1 will be able to sign in to each customer's Azure SQL database by using Azure Data Studio.	<input type="radio"/>	<input checked="" type="radio"/>
DBAGroup1 will be able to assign the SQL DB Contributor role to other users.	<input type="radio"/>	<input checked="" type="radio"/>
DBAGroup2 will be able to create a new Azure SQL database on each customer's Azure SQL Database server.	<input checked="" type="radio"/>	<input type="radio"/>

Box 1: No -

DBAGroup1 is member of the Contributor role.

The Contributor role grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC, manage assignments in Azure Blueprints, or share image galleries.

Box 2: No -

Contributor - Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC

SQL DB Contributor - Lets you manage SQL databases, but not access to them. Also, you can't manage their security-related policies or their parent SQL servers.

Box 3: Yes -

DBAGroup2 is member of the SQL DB Contributor role.

The SQL DB Contributor role lets you manage SQL databases, but not access to them.

Also, you can't manage their security-related policies or their parent SQL servers. As a member of this role you can create and manage SQL databases.

Reference:

<https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles>

Community Discussion

Proposed answer is wrong. The correct answer is: NO - with contributor you cannot access database, you can only manage them (except for security) NO (contributor cannot manage security) YES (since you have this permission on each logical server, you can create database)

Microsoft states that the following rules apply: Contributor - Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC SQL DB Contributor - Lets you manage SQL databases, but not access to them. Also, you can't manage their security-related policies or their parent SQL servers. Answer looks good from this perspective: Yes-No-Yes

There is so much uncertainty in these questions, it goes to show how much of a shit show azure is.

No, No, Yes Contributor - Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC. All these permissions are to make changes to the database setting at Azure Portal level. For the user to connect to database using SSMS/ Data Studio to perform any tasks at database level, user/group need to be given permissions by Admin first.

NO, permission is only on THIS logical server. The group has no right to create databases on another server (unless there is more privileges that are not shown here) so NO, NO, NO

Question #258

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪ Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

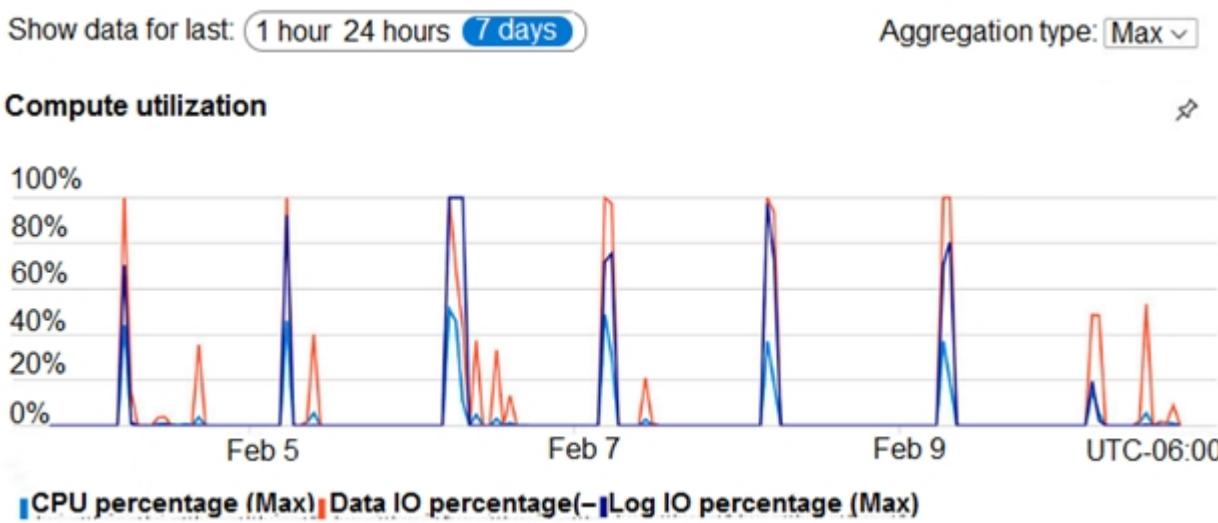
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

Check access **Role assignments** **Deny assignments** **Classic administrators** **Roles**

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription [\(15\)](#)

15 **2000**

Name (1)	Type (1)	Role (1)	Scope (1)
<input type="text"/> Search by name or email	<input type="button" value="Groups"/>	<input type="button" value="2 selected"/>	<input type="button" value="All scopes"/>

Group by [\(1\)](#)

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
Contributor <input type="checkbox"/>  DBAGroup1	Group	Contributor (1)	This resource
SQL DB Contributor <input type="checkbox"/>  DBAGroup2	Group	SQL DB Contributor (1)	This resource

Question You need to recommend a solution to ensure that the customers can create the database objects. The solution must meet the business goals.
What should you include in the recommendation?

- A) For each customer, grant the customer `ddl_admin` to the existing schema.
- B) For each customer, create an additional schema and grant the customer `ddl_admin` to the new schema. (Correct Answer)**
- C) For each customer, create an additional schema and grant the customer `db_writer` to the new schema.
- D) For each customer, grant the customer `db_writer` to the existing schema.

Explanation

Correct Answer:

B

Scenario: Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by Contoso.

Members of the `db_ddladmin` fixed database role can run any Data Definition Language (DDL) command in a database.

Incorrect:

Not D: `db_writer` does not have permissions to create database objects.

Reference:

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

Community Discussion

db_writer doesn't have permissions to run Create objects. Should be B

db_writer doesn't have permissions to run Create objects. Should be B

Selected Answer: B

db_writer cannot do DDL commands so cannot create any new objects

Selected Answer: B

Its B each user should create a DB but not modify exiting DBs. db_writer you can only do inserts and updates but not create DB objects and DBs

Selected Answer: B

Since the requirement says - "Ensure that users can create their own DB object but be prevented from modifying any existing DB objects", it would be best to create a separate schema for that and provide access only on that schema.

Question #259

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪

Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

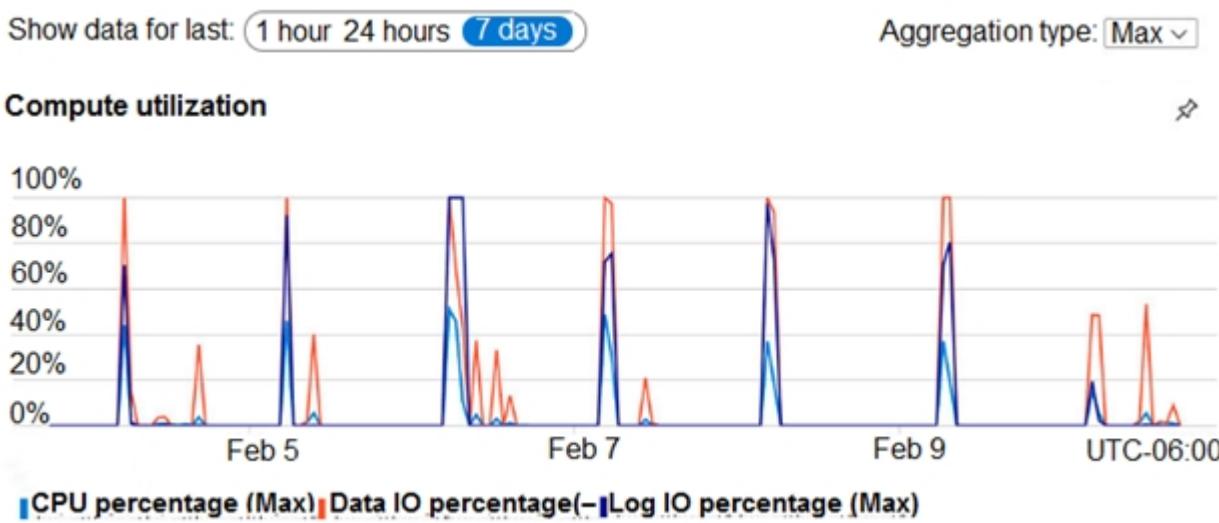
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

Check access **Role assignments** **Deny assignments** **Classic administrators** **Roles**

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription 15 / 2000

Name Type Role Scope

Group by Role

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
Contributor <input type="checkbox"/> DBAGroup1	Group	Contributor	This resource
SQL DB Contributor <input type="checkbox"/> DBAGroup2	Group	SQL DB Contributor	This resource

Question 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) (Correct Answer)

Explanation

Correct Answer:

D

Scenario: Provide the customers with different table and row access based on the customer's service agreement.

Row-level security (RLS) is a feature added as of SQL Server 2016. Instead of encrypting or decrypting a database's table data, it restricts and filters a table's row- level data in accordance with security policies defined by the user. This enables the database engine to limit the number of exposed data rows.

Reference:

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

Community Discussion

Selected Answer: D

Provide the customers with different table and row access based on the customer's service agreement and the question asks to meet the service agreement

Selected Answer: D

Row-Level Security enables you to use group membership or execution context to control access to rows in a database table.

Selected Answer: D

The question is what FEATURE you should use. "Row-level security (RLS) is a feature added as of SQL Server 2016. Instead of encrypting or decrypting a database's table data, it restricts and filters a table's row-level data in accordance with security policies defined by the user. This enables the database engine to limit the number of exposed data rows."

Selected Answer: C

The question is not related to database only. Because every customer will have a separate resource and it will be automated by script, Service principal will be best way to handle access to resources Reference: <https://identity-man.eu/2021/03/19/service-principals-all-you-need-to-know/>

Question #260

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question

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.

Hot Area:

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

Correct 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

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

Scenario:

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.

Incorrect Answers:

Azure Log Analytics -

Azure metric and log data are sent to Azure Monitor Logs, previously known as Azure Log Analytics, directly by Azure. Azure SQL Analytics is a cloud only monitoring solution supporting streaming of diagnostics telemetry for all of your Azure SQL databases. However, because Azure SQL Analytics does not use agents to connect to Azure Monitor, it does not support monitoring of SQL Server hosted on-premises or in virtual machines.

Community Discussion

Further to my previous comment the below is in the scenario: 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.

IMO, collecting 'basic' metric from the Elastic pool and the database to a Log Analytics Workspace is enough to meet the tech requirements.

A: Elastic pool and databases B: Log Analytics Streaming to log analytics is possible:
<https://learn.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure?view=azuresql&tabs=azure-portal> You can stream metrics and resource logs to a Log Analytics workspace in Azure Monitor. Data streamed here can be consumed by SQL Analytics (preview), which is a cloud only monitoring solution that provides intelligent monitoring of your databases that includes performance reports, alerts, and mitigation recommendations. Data streamed to a Log Analytics workspace can be analyzed with other monitoring data collected and also enables you to leverage other Azure Monitor features such as alerts and visualizations.
<https://learn.microsoft.com/en-us/azure/azure-sql/database/monitor-tune-overview?view=azuresql> Collecting server metrics is not an option: <https://learn.microsoft.com/en-us/azure/azure-sql/database/elastic-pool-resource-management?view=azuresql>

Because you need to collect and stream data, it has to go to the destination of Azure Event Hub.

Log Analytics does not support monitoring of SQL Server hosted on-premises or in virtual machines.

Question #261

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪

Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

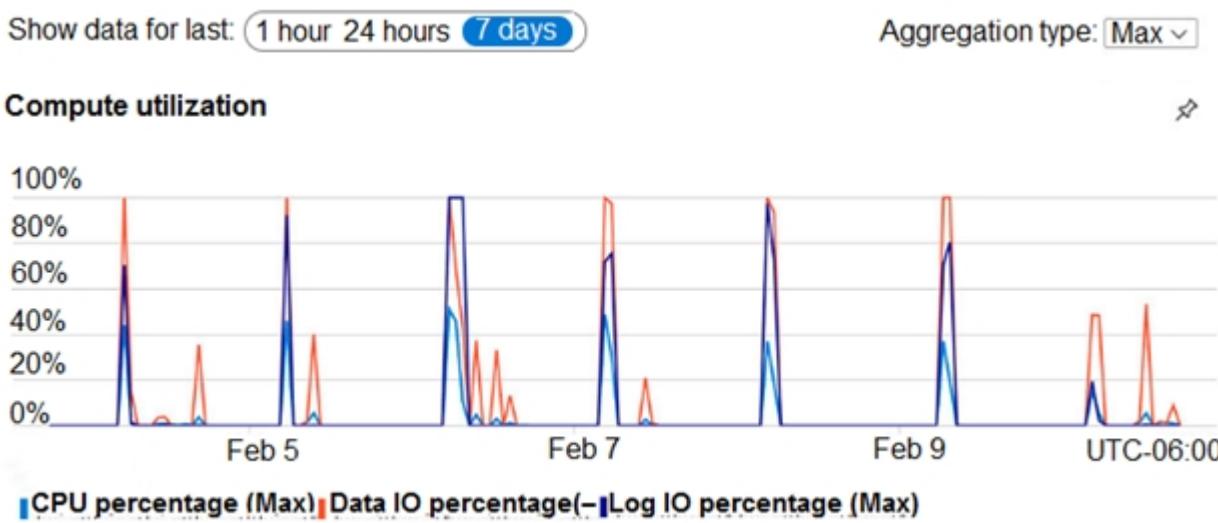
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Check access Role assignments Deny assignments Classic administrators Roles

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription 15 2000

Name Type Role Scope
 Search by name or email Groups 2 selected All scopes

Group by Role

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
Contributor <input type="checkbox"/> DB DBAGroup1	Group	Contributor	This resource
SQL DB Contributor <input type="checkbox"/> DB DBAGroup2	Group	SQL DB Contributor	This resource

Question Based on the PaaS prototype, which Azure SQL Database compute tier should you use?

A) Business Critical 4-vCore
 B) Hyperscale
 C) General Purpose v-vCore
D) Serverless (Correct Answer)

Explanation

Correct Answer:
 D

Scenario: Exhibit show idle periods with intermittent spikes.

Serverless is a compute tier for single databases in Azure SQL Database that automatically scales compute based on workload demand and bills for the amount of compute used per second. The serverless compute tier also automatically pauses databases during inactive periods when only storage is billed and automatically resumes databases when activity returns.

Incorrect Answers:

B: Hyperscale is for large databases

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview>

Community Discussion

In my opinion it should be General Purpose Serverless as you can configure max and min vCores and configure Pause to save costs. So D Serverless seems the most appropriate option.

I will go with serverless since there are consistent idle periods.

Ok hear me out. The question is: Based on the PaaS prototype, which Azure SQL Database compute tier should you use? It does not ask which service tier. There are 2 different compute tiers: Provisioned and Serverless. While the provisioned compute tier provides a specific amount of compute resources that are continuously provisioned independent of workload activity, the serverless compute tier auto-scales compute resources based on workload activity. The answer is clearly serverless unless whoever wrote this question does not know the difference between service tier and compute tier. Thank you for listening!

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover. Should be "A", Always On Availability Group and Geo replication are needed. <https://docs.microsoft.com/en-us/azure/azure-sql/database/high-availability-sla> <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview>

The solution must provide automatic failover. That is why I select "A".

Question #262

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

General Overview -

Contoso, Ltd. is a financial data company that has 100 employees. The company delivers financial data to customers.

Physical Locations -

Contoso has a datacenter in Los Angeles and an Azure subscription. All Azure resources are in the US West 2 Azure region. Contoso has a 10-Gb ExpressRoute connection to Azure.

The company has customers worldwide.

Existing Environment -

Active Directory -

Contoso has a hybrid Azure Active Directory (Azure AD) deployment that syncs to on-premises Active Directory.

Database Environment -

Contoso has SQL Server 2017 on Azure virtual machines shown in the following table.

Name	Role
SQL1	Primary data warehouse
SQL2	Secondary data warehouse
SQL3	Extract, transform, and load (ETL) server

SQL1 and SQL2 are in an Always On availability group and are actively queried. SQL3 runs jobs, provides historical data, and handles the delivery of data to customers.

The on-premises datacenter contains a PostgreSQL server that has a 50-TB database.

Current Business Model -

Contoso uses Microsoft SQL Server Integration Services (SSIS) to create flat files for customers. The customers receive the files by using FTP.

Requirements -

Planned Changes -

Contoso plans to move to a model in which they deliver data to customer databases that run as platform as a service (PaaS) offerings. When a customer establishes a service agreement with Contoso, a separate resource group that contains an Azure SQL database will be provisioned for the customer. The database will have a complete copy of the financial data. The data to which each customer will have access will depend on the service agreement tier. The customers can change tiers by changing their service agreement.

The estimated size of each PaaS database is 1 TB.

Contoso plans to implement the following changes:

Move the PostgreSQL database to Azure Database for PostgreSQL during the next six months.

Upgrade SQL1, SQL2, and SQL3 to SQL Server 2019 during the next few months.
Start onboarding customers to the new PaaS solution within six months.

Business Goals -

Contoso identifies the following business requirements:

Use built-in Azure features whenever possible.

▪

Minimize development effort whenever possible.

Minimize the compute costs of the PaaS solutions.

Provide all the customers with their own copy of the database by using the PaaS solution.

Provide the customers with different table and row access based on the customer's service agreement.

In the event of an Azure regional outage, ensure that the customers can access the PaaS solution with minimal downtime. The solution must provide automatic failover.

Ensure that users of the PaaS solution can create their own database objects but be prevented from modifying any of the existing database objects supplied by

Contoso.

Technical Requirements -

Contoso identifies the following technical requirements:

Users of the PaaS solution must be able to sign in by using their own corporate Azure AD credentials or have Azure AD credentials supplied to them by Contoso. The solution must avoid using the internal Azure AD of Contoso to minimize guest users.

All customers must have their own resource group, Azure SQL server, and Azure SQL database. The deployment of resources for each customer must be done in a consistent fashion.

Users must be able to review the queries issued against the PaaS databases and identify any new objects created.

Downtime during the PostgreSQL database migration must be minimized.

Monitoring Requirements -

Contoso identifies the following monitoring requirements:

Notify administrators when a PaaS database has a higher than average CPU

usage.

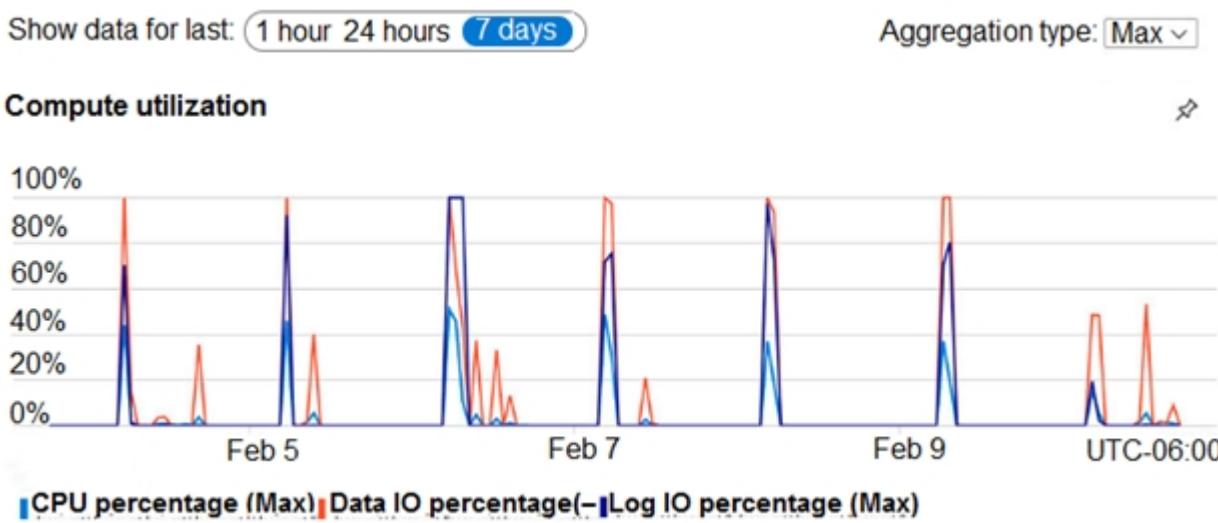
Use a single dashboard to review security and audit data for all the PaaS databases.

Use a single dashboard to monitor query performance and bottlenecks across all the PaaS databases.

Monitor the PaaS databases to identify poorly performing queries and resolve query performance issues automatically whenever possible.

PaaS Prototype -

During prototyping of the PaaS solution in Azure, you record the compute utilization of a customer's Azure SQL database as shown in the following exhibit.



Role Assignments -

For each customer's Azure SQL Database server, you plan to assign the roles shown in the following exhibit.

Add **Edit columns** **Refresh** | **Remove** | **Got feedback?**

[Check access](#) [Role assignments](#) [Deny assignments](#) [Classic administrators](#) [Roles](#)

Manage access to Azure resources for users, groups, service principals and managed identities at this scope by creating role assignments. [Learn more](#)

Number of role assignments for this subscription 15 2000

Name	Type	Role	Scope
<input type="text"/> Search by name or email	<input type="button" value="Groups"/>	<input type="button" value="2 selected"/>	<input type="button" value="All scopes"/>
Group by <input type="button" value="Role"/>			

i Showing a filtered set of results. Total number of role assignments: 15

2 items (2 Groups)

<input type="checkbox"/> Name	Type	Role	Scope
<input type="checkbox"/> DB DBAGroup1	Group	Contributor	This resource
<input type="checkbox"/> DB SQL DB Contributor	Group	SQL DB Contributor	This resource
<input type="checkbox"/> DB DBAGroup2	Group	SQL DB Contributor	This resource

Question Which audit log destination should you use to meet the monitoring requirements?

- A) Azure Storage
- B) Azure Event Hubs

C) Azure Log Analytics (Correct Answer)

Explanation

Correct Answer:

C

Scenario: Use a single dashboard to review security and audit data for all the PaaS databases.

With dashboards can bring together operational data that is most important to IT across all your Azure resources, including telemetry from Azure Log Analytics.

Note: Auditing for Azure SQL Database and Azure Synapse Analytics tracks database events and writes them to an audit log in your Azure storage account, Log Analytics workspace, or Event Hubs.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-monitor/visualize/tutorial-logs-dashboards>

Community Discussion

I think it's correct

Monitoring requirements is only for PaaS databases

is Azure Log Analytics for cloud only, but can't be use for hybrid? there is another question early explaining the difference between Event hub and Log Analytics. Event Hubs was chosen because Log Analytics only support cloud.

Question #263

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a retailer that sells products through two sales channels: retail stores and a website.

Existing Environment -

ADatum has one database server that has Microsoft SQL Server 2016 installed. The server hosts three mission-critical databases named SALESDB, DOCDB, and REPORTINGDB.

SALESDB collects data from the stores and the website.

DOCDB stores documents that connect to the sales data in SALESDB. The documents are stored in two different JSON formats based on the sales channel. REPORTINGDB stores reporting data and contains several columnstore indexes.

A daily process creates reporting data in REPORTINGDB from the data in SALESDB. The process is implemented as a SQL Server Integration Services (SSIS) package that runs a stored procedure from SALESDB.

Requirements -

Planned Changes -

ADatum plans to move the current data infrastructure to Azure. The new infrastructure has the following requirements:

Migrate SALESDB and REPORTINGDB to an Azure SQL database.

Migrate DOCDB to Azure Cosmos DB.

The sales data, including the documents in JSON format, must be gathered as it arrives and analyzed online by using Azure Stream Analytics. The analytics process will perform aggregations that must be done continuously, without gaps, and without overlapping.

As they arrive, all the sales documents in JSON format must be transformed into one consistent format.

Azure Data Factory will replace the SSIS process of copying the data from SALESDB to REPORTINGDB.

Technical Requirements -

The new Azure data infrastructure must meet the following technical requirements:

Data in SALESDB must be encrypted by using Transparent Data Encryption (TDE).

The encryption must use your own key.

SALESDB must be restorable to any given minute within the past three weeks.

Real-time processing must be monitored to ensure that workloads are sized properly based on actual usage patterns.

Missing indexes must be created automatically for REPORTINGDB.

Disk IO, CPU, and memory usage must be monitored for SALESDB.

Question
Which windowing function should you use to perform the streaming aggregation of the sales data?

- A) Sliding
- B) Hopping
- C) Session

D) Tumbling (Correct Answer)

Explanation

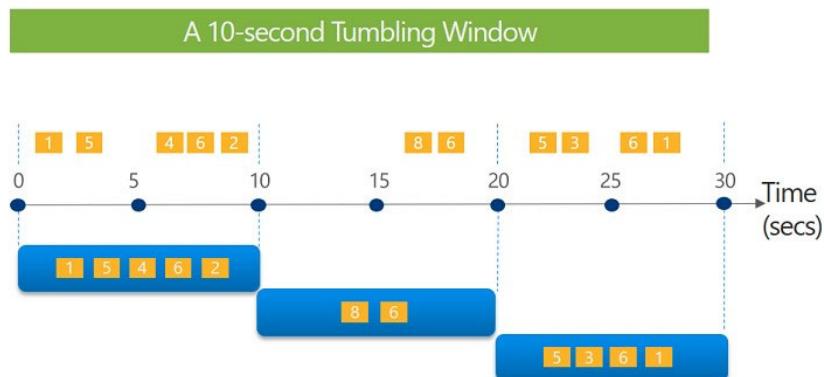
Correct Answer:

D

Scenario: The sales data, including the documents in JSON format, must be gathered as it arrives and analyzed online by using Azure Stream Analytics. The analytics process will perform aggregations that must be done continuously, without gaps, and without overlapping.

Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.

Tell me the count of Tweets per time zone every 10 seconds



```
SELECT TimeZone, COUNT(*) AS Count
FROM TwitterStream TIMESTAMP BY CreatedAt
GROUP BY TimeZone, TumblingWindow(second,10)
```

Reference:

<https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/stream-analytics/stream-analytics-window-functions.md>

Community Discussion

When you see "without gaps, and without overlapping", go to Tumbling.

Selected Answer: D

Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key

differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.

Selected Answer: D

The answer should be correct

Question #264

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a retailer that sells products through two sales channels: retail stores and a website.

Existing Environment -

ADatum has one database server that has Microsoft SQL Server 2016 installed. The server hosts three mission-critical databases named SALESDB, DOCDB, and REPORTINGDB.

SALESDB collects data from the stores and the website.

DOCDB stores documents that connect to the sales data in SALESDB. The documents are stored in two different JSON formats based on the sales channel. REPORTINGDB stores reporting data and contains several columnstore indexes.

A daily process creates reporting data in REPORTINGDB from the data in SALESDB. The process is implemented as a SQL Server Integration Services (SSIS) package that runs a stored procedure from SALESDB.

Requirements -

Planned Changes -

ADatum plans to move the current data infrastructure to Azure. The new infrastructure has the following requirements:

Migrate SALESDB and REPORTINGDB to an Azure SQL database.

Migrate DOCDB to Azure Cosmos DB.

The sales data, including the documents in JSON format, must be gathered as it arrives and analyzed online by using Azure Stream Analytics. The analytics process will perform aggregations that must be done continuously, without gaps, and without overlapping.

As they arrive, all the sales documents in JSON format must be transformed into one consistent format.

Azure Data Factory will replace the SSIS process of copying the data from SALESDB to REPORTINGDB.

Technical Requirements -

The new Azure data infrastructure must meet the following technical requirements:

Data in SALESDB must be encrypted by using Transparent Data Encryption (TDE).

The encryption must use your own key.

SALESDB must be restorable to any given minute within the past three weeks.

Real-time processing must be monitored to ensure that workloads are sized properly based on actual usage patterns.

Missing indexes must be created automatically for REPORTINGDB.

Disk IO, CPU, and memory usage must be monitored for SALESDB.

Question
Which counter should you monitor for real-time processing to meet the technical requirements?

A) SU% Utilization (Correct Answer)

- B) CPU% utilization
- C) Concurrent users
- D) Data Conversion Errors

Explanation

Correct Answer:

A

Scenario:

- * The sales data, including the documents in JSON format, must be gathered as it arrives and analyzed online by using Azure Stream Analytics.
- * Real-time processing must be monitored to ensure that workloads are sized properly based on actual usage patterns.

Streaming Units (SUs) represents the computing resources that are allocated to execute a Stream Analytics job. The higher the number of SUs, the more CPU and memory resources are allocated for your job. This capacity lets you focus on the query logic and abstracts the need to manage the hardware to run your Stream Analytics job in a timely manner.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-streaming-unit-consumption>

Community Discussion

SU% I think is correct. <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-streaming-unit-consumption>

Selected Answer: B

You can quickly monitor a variety of resource metrics in the Azure portal in the Metrics view. These metrics enable you to see if a database is reaching 100% of processor, memory, or IO resources. The SU % utilization metric, which ranges from 0% to 100%, describes the memory consumption of your workload.

SU% is not correct.

SU% is not correct.

Streaming Units % is correct.

Question #265

Introductory Info Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.



To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

Litware, Inc. is a renewable energy company that has a main office in Boston. The main office hosts a sales department and the primary datacenter for the company.

Physical Locations -

Litware has a manufacturing office and a research office in separate locations near Boston. Each office has its own datacenter and internet connection.

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. Question You need to identify the cause of the performance issues on SalesSQLDb1.

Which two dynamic management views should you use? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) sys.dm_pdw_nodes_tran_locks

B) sys.dm_exec_compute_node_errors

C) sys.dm_exec_requests (Correct Answer)

D) sys.dm_cdc_errors

E) sys.dm_pdw_nodes_os_wait_stats

F) sys.dm_tran_locks (Correct Answer)

Explanation

Correct Answer:

CF

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

Seeing a Count of All Active SQL Server Wait Types.

Sometimes we're trying to diagnose a problem and we want to know if we're seeing a large number of wait types occurring. We can do this using sys.dm_exec_requests because the current wait type being experienced is presented. Therefore, if we filter out any background or sleeping tasks, we can get a picture of what the waits are for active requests and we can also see if we have a problem. Here's the query:

```
SELECT COALESCE(wait_type, 'None') AS wait_type, COUNT(*) AS Total
```

```
FROM sys.dm_exec_requests -
```

```
WHERE NOT status IN ('Background', 'Sleeping')
```

```
GROUP BY wait_type -
```

```
ORDER BY Total DESC;
```

Here is an example of the query output:

wait_type	Total
1 LCK_M_S	2
2 None	1

We see that we have two LCK_M_S wait types. This is the wait type we get when we have requests waiting on obtaining a shared lock. We can then query along with sys.dm_tran_locks to determine what types of locks these active requests were trying to obtain:

```
SELECT L.request_session_id, L.resource_type,  
L.resource_subtype, L.request_mode, L.request_type
```

```
FROM sys.dm_tran_locks AS L -  
JOIN sys.dm_exec_requests AS DER  
ON L.request_session_id = DER.session_id  
WHERE DER.wait_type = 'LCK_M_S';
```

Incorrect:

Not A: Azure SQL database does not have sys.dm_pdw_nodes_tran_locks.

Not E: Azure SQL database does not have sys.dm_pdw_nodes_os_wait_stats.

Reference:

<https://www.mssqltips.com/sqlservertip/5521/understanding-and-using-sql-server-sysdmexecrequests/>

Community Discussion

Last question in this dump as of 24.01.23. Happy learning

Rest here travesera. You've seen too many DataBases todas.

Rest here travesera. You've seen too many DataBases todas.

sys.dm_exec_requests: returns information about each request that is executing in SQL Server. sys.dm_tran_locks: Returns information about currently active lock manager resources in SQL Server. Each row represents a currently active request to the lock manager for a lock that has been granted or is waiting to be granted. <https://learn.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-tran-locks-transact-sql?view=sql-server-ver16> <https://learn.microsoft.com/>

[en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-exec-requests-transact-sql?view=sql-server-ver16](https://learn.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-exec-requests-transact-sql?view=sql-server-ver16)

pdw = parallel data warehouse <https://learn.microsoft.com/en-us/sql/analytic-platform-system/tsql-system-views?view=aps-pdw-2016-au7>

Question #266

You have an Azure subscription that contains an Azure SQL database. The database contains a table named table1.

You execute the following Transact-SQL statements.

```
CREATE CLUSTERED INDEX PK_index1 ON [dbo].[table1] ([Column1])
CREATE NONCLUSTERED INDEX [NCI_index2] ON [dbo].[table1] ([Column1]) ASC
```

You need to reduce the time it takes to perform analytic queries on the database.

Which configuration should you enable?

- A) ROW_MODE_MEMORY_GRANT_FEEDBACK
- B) BATCH_MODE_MEMORY_GRANT_FEEDBACK
- C) BATCH_MODE_ADAPTIVE_JOINS
- D) BATCH_MODE_ON_ROWSTORE (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

...This feature, Batch Mode on Rowstore, allows all operators enabled for batch mode to operate as such in SQL Server. What does this mean? It means that query operations can

process data faster, more efficiently and mimic what makes columnstore so fast. Instead of reading row by row (row store mode) it can read in chunks i.e. batches of 900 rows at a time. The performance impact of this can be tremendous which effectively uses CPU more efficiently. <https://sqlespresso.com/2020/06/16/what-is-batch-mode-on-rowstore-in-sql-server/>

Selected Answer: D

<https://www.sqlshack.com/sql-server-2019-new-features-batch-mode-on-rowstore/>

Since the question is specifically asking about reducing the time it takes to perform analytic queries on the database, the BATCH_MODE_ADAPTIVE_JOINS configuration should be enabled. This feature is designed to dynamically choose the optimal join algorithm based on the input data sets and available memory. It is particularly effective for analytical queries where the performance can benefit significantly from batch mode processing. While the BATCH_MODE_MEMORY_GRANT_FEEDBACK configuration can also help improve query performance by adjusting memory grant allocations for batch mode queries, it is not as effective as the adaptive join feature in the context of analytical queries. I think the answer is C.

Question #267

DRAG DROP

You create a new Azure SQL managed instance named SQL1 and enable Database Mail extended stored procedures.

You need to ensure that SQL Server Agent jobs running on SQL1 can notify administrators when a failure occurs.

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	Answer Area
Create a Database Mail account.	
Create a profile named AzureManagedInstance_dbmail_profile.	▶ ◀
Create a profile named application_dbmail_profile.	^ ▼
Enable email notifications upon failure.	
Enable pager notifications upon failure.	

Explanation

Correct Answer:

Answer Area

Create a Database Mail account.
Create a profile named AzureManagedInstance_dbmail_profile.
Enable email notifications upon failure.



Community Discussion

Given answer is correct, 1) Create a Database Mail account 2) Create a profile 3) Enable email notification The database mail configuration wizard would start the profile creation first, however, need to complete the account creation first before the profile creation can be completed. So the order is correct.

<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql#job-notifications>

<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql#job-notifications>

Question #268

You deploy an instance of SQL Server on Azure Virtual Machines named VM1.

You need to create a SQL Server Agent job that will rebuild indexes of the databases hosted on VM1. The solution must use the principle of least privilege.

What should you create first?

- A) a local Windows account
- B) a user-assigned managed identity in Azure AD
- C) a system-assigned managed identity in Azure AD (Correct Answer)**
- D) an Elastic Job agent

Explanation

Correct Answer:

C

Community Discussion

The answer is correct. C. a system-assigned managed identity in Azure AD should be created first to implement the principle of least privilege when creating a SQL Server Agent job that will rebuild indexes of the databases hosted on VM1. With a system-assigned managed identity, Azure automatically creates an identity in Azure AD that is tied to the Azure VM instance. This allows you to grant the identity permissions to the specific resources that it requires, without having to manage credentials or rotate passwords. Using a managed identity ensures that only the necessary permissions are granted to the job, which is in line with the principle of least privilege. The job can then use this managed identity to perform the required actions, such as rebuilding indexes.

A. local Windows account The question does not say if tenant has Azure AD or is joined to domain, and also I don't see how SQL Agent needs system-assigned or user-assigned managed identity to run jobs on SQL Server ? I can see how local windows account is needed for SQL Agent service to run

Selected Answer: C

C. Create a system-assigned managed identity in Azure AD. A system-assigned managed identity enables an Azure resource to identify itself to Azure AD. It can be used to access Azure resources and services without typically storing usernames and passwords in the code.

Careful guys, While a user-assigned identity is convenient as far as being able to assign it to multiple resources, this questions specifically refers to a SINGLE sql server on a SINGLE virtual machine. If this question was asking about how to rebuild indexes on multiple sql vm servers, then yes it would be better to leverage a user-assigned identity. My answer is C.

should be user assigned managed identity. "User-assigned managed identities are more efficient in a broader range of scenarios than system-assigned managed identities. See the table below for some scenarios and the recommendations for user-assigned or system-assigned. User-assigned identities can be used by multiple resources, and their life cycles are decoupled from the resources' life cycles with which they're associated. Read which resources support managed identities." <https://learn.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/managed-identity-best-practice-recommendations>

Question #269

HOTSPOT

You need to deploy an Azure SQL Database elastic pool by using a Bicep template.

How should you complete the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

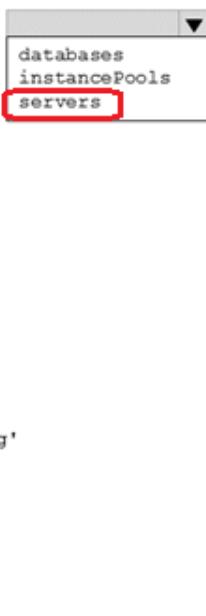
```
resource symbolicname 'Microsoft.Sql/' /elasticPools@2021-11-01-preview' = {
    name: 'string'
    location: 'string'
    tags: {
    }
    sku: {
        ...
    }
    parent: resourceSymbolicName
    properties: {
        highAvailabilityReplicaCount: int
        licenseType: 'string'
        maintenanceConfigurationId: 'string'
        maxSizeBytes: int
        : int
        Capacity
        maxCapacity
        minCapacity
    }
    perDatabaseSettings: {
        maxCapacity: int
        minCapacity: int
    }
    zoneRedundant: bool
}
}
```

Explanation

Correct Answer:

Answer Area

```
resource symbolicname 'Microsoft.Sql/  
  name: 'string'  
  location: 'string'  
  tags: {  
  }  
  sku: {  
    ...  
  }  
  parent: resourceSymbolicName  
  properties: {  
    highAvailabilityReplicaCount: int  
    licenseType: 'string'  
    maintenanceConfigurationId: 'string'  
    maxSizeBytes: int  
    : int  
    Capacity  
    maxCapacity  
    minCapacity  
  }  
  perDatabaseSettings: {  
    maxCapacity: int  
    minCapacity: int  
  }  
  zoneRedundant: bool  
}  
}
```



Community Discussion

Server minCapacity <https://learn.microsoft.com/en-us/azure/templates/microsoft.sql/servers/databases?pivots=deployment-language-bicep>

<https://learn.microsoft.com/en-us/azure/templates/microsoft.sql/servers/elasticpools?pivots=deployment-language-bicep> minCapacity Minimal capacity that serverless pool will not shrink below, if not paused

correct

Declare the resource type for the elastic pool in the template, which should be Microsoft.Sql/servers/elasticPools.

Question #270

You have an Azure AD tenant and a logical Microsoft SQL server named SQL1 that hosts several Azure SQL databases.

You plan to assign Azure AD users permissions to the databases automatically by using Azure Automation.

You need to create the required Automation accounts.

Which two accounts should you create? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A) From the Azure Active Directory admin center create a service principal. (Correct Answer)

B) From the Azure Active Directory admin center, create a user-assigned managed identity for SQL1.

C) On SQL1, create a SQL user in the databases. (Correct Answer)

D) On SQL1, create a SQL login.

E) From the Azure Active Directory admin center, create an external identity.

Explanation

Correct Answer:

AC

Community Discussion

Selected Answer: AC

Seems correct <https://learn.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-service-principal-tutorial?view=azuresql>

Question #271

You have an Azure subscription.

You plan to deploy an instance of SQL Server on Azure Virtual Machines by using an Azure Marketplace image.

You need to register the SQL Server IaaS Agent extension (SqlIaaSExtension). The solution must meet the following requirements:

- Install critical updates for SQL Server automatically.
- Minimize performance impact on the virtual machine.

Which management mode should you select?

A) full (Correct Answer)

- B) lightweight
C) NoAgent

Explanation

Correct Answer:

A

Community Discussion

B. lightweight

It seems that this question is now obsolete. Since April 2023 there are no management modes for the agent. "Going forward, customers register with the SQL IaaS Agent extension and enable the required features they would like for their SQL Server on Azure virtual machines. Based on the features selected, the SQL IaaS agent extension would assume only the permissions required on the SQL Server to enable those features." Source: <https://techcommunity.microsoft.com/t5/sql-server-blog/announcement-new-features-and-changes-to-sql-iaas-agent/ba-p/3791548>

Selected Answer: A

<https://youtu.be/ckSvoe6Ho3g>

Lightweight mode is recommended for the SQL Server IaaS Agent extension (SqlIaaSExtension) in order to meet the requirements of automatically installing critical updates for SQL Server and minimizing performance impact on the virtual machine.

God Saves King Savill in our path through the Azure desert.

Question #272

HOTSPOT

You configure backups for an Azure SQL database as shown in the following exhibit.

Point-in-time-restore

Specify how long you want to keep your point-in-time backups. [Learn more ↗](#)

How many days would you like PITR backups to be kept? ⓘ

 14**Long-term retention**

Specify how long you want to keep your long-term retention backups. You may choose to keep yearly backups for up to 10 years. [Learn more ↗](#)

Weekly LTR Backups

Keep weekly backups for:

 Week(s) **Monthly LTR Backups**

Keep the first backup of each month for:

 Week(s) **Yearly LTR Backups**

Keep an annual backup for:

 Year(s) 

Which weekly backup of the year would you like to keep?

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

To restore from a failure that occurred two days ago and caused minimal data loss, you must use a [answer choice]

- point-time restore (PITR) backup.
- yearly long-term retention (LTR) backup.
- weekly long-term retention (LTR) backup.
- monthly long-term retention (LTR) backup.

After the 52nd weekly backup runs, there will be [answer choice] in long term retention.

- 1 backup copy
- 52 backup copies
- 64 backup copies
- 65 backup copies

Explanation

Correct Answer:

To restore from a failure that occurred two days ago and caused minimal data loss, you must use a [answer choice]

- point-time restore (PITR) backup.
- yearly long-term retention (LTR) backup.
- weekly long-term retention (LTR) backup.
- monthly long-term retention (LTR) backup.

After the 52nd weekly backup runs, there will be [answer choice] in long term retention.

- 1 backup copy
- 52 backup copies
- 64 backup copies
- 65 backup copies

Community Discussion

52 backups: Azure uses the same weekly backup for the monthly backup and year backup.

52-weeks + 12-month + 1 (The 52nd week) = 65

Agree, only 1 copy is in LTR storage: <https://learn.microsoft.com/en-us/azure/azure-sql/database/long-term-retention-overview?view=azuresql>

Agree, only 1 copy is in LTR storage: <https://learn.microsoft.com/en-us/azure/azure-sql/database/long-term-retention-overview?view=azuresql>

The answer is correct. 52 Weekly backup + 12 Monthly backup + 1 Yearly backup

Question #273

You have an Azure subscription that contains an Azure SQL database named SQL1.

SQL1 is in an Azure region that does not support availability zones.

You need to ensure that you have a secondary replica of SQL1 in the same region.

What should you use?

- A) log shipping
- B) active geo-replication (Correct Answer)**
- C) Microsoft SQL Server failover clusters
- D) auto-failover groups

Explanation

Correct Answer:

B

Community Discussion

Selected Answer: B

Active geo-replication is a feature that lets you create a continuously synchronized readable secondary database for a primary database. The readable secondary database may be in the same Azure region as the primary, or, more commonly, in a different region. This kind of readable secondary database is also known as a geo-secondary or geo-replica. <https://learn.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview?source=recommendations&view=azuresql>

Answer is correct. You can create a new logical server in the same region and use geo-replication to add a replica to it. The 2 logical servers will exist in the same datacenter

Question #274

You have an Azure SQL database named SQLDb1 that contains the resources shown in the following table.

Name	Type
Table1	Rowstore table
Column1	Nvarchar(max)

Column1 contains JSON data.

You need to compress Column1. The solution must minimize the amount of storage used.

What should you use?

- A) the **COMPRESS()** function (Correct Answer)
B) columnstore archive compression
C) row compression
D) columnstore compression

Explanation

Correct Answer:

A

Community Discussion

Correct Answer: C
ALTER TABLE dbo.Table1 REBUILD PARTITION = ALL WITH
(DATA_COMPRESSION = ROW); GO

Selected Answer: A

<https://learn.microsoft.com/es-es/sql/t-sql/functions/compress-transact-sql?view=sql-server-ver16>

To compress Column1, which contains JSON data, you should use the COMPRESS() function. This function can be used to compress data stored in an NVARCHAR(MAX) column1. So the correct answer is A. the COMPRESS() function.

COMPRESS (expression) not only applies to Azure SQL DB but also supports the following expressions: binary(n) char(n) nchar(n) nvarchar(max) nvarchar(n) varbinary(max) varbinary(n) varchar(max) varchar(n) <https://learn.microsoft.com/en-us/sql/t-sql/functions/compress-transact-sql?view=sql-server-ver16>

Output of Compress function is varbinary(max), the column is nvarchar(max), it is incompatible.

Question #275

You have an Azure subscription that contains two instances of SQL Server on Azure Virtual Machines named VM1 and VM2. Both instances run Microsoft SQL Server 2019 CU8.

You need to deploy a failover cluster instance (FCI) to VM1 and VM2 that will use Azure shared disks. The solution must maximize resiliency.

Which quorum option should you use?

- A) node majority with a cloud witness
- B) node majority with no witness
- C) node majority with a file share witness
- D) node majority with a disk witness (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Sorry, D is the correct answer. LOL

Question #276

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

A) Azure SQL Database Premium (Correct Answer)

- B) Azure SQL Database serverless
- C) Azure SQL Database Basic
- D) Azure SQL Database Hyperscale

Explanation

Correct Answer:

A

Community Discussion

Selected Answer: A

Correct answer is A: To ensure automatic failover without data loss if a datacenter fails, you should choose the Business Critical deployment option and the Premium pricing tier for the Azure SQL database named DB1. The Business Critical deployment option provides a 99.995% availability SLA, and the Premium pricing tier includes features such as advanced security, high availability, and business continuity. This option also offers the ability to use a failover group with multiple readable secondary replicas.

Selected Answer: A

Question #277

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

A) Azure SQL Database Business Critical (Correct Answer)

- B) Azure SQL Database Standard
- C) Azure SQL Database managed instance General Purpose
- D) Azure SQL Database Hyperscale

Explanation

Correct Answer:

A

Community Discussion

Selected Answer: A

Correct answer is A: To ensure automatic failover without data loss if a datacenter fails, you should choose the Business Critical deployment option and the Premium pricing tier for the Azure SQL database named DB1

Azure SQL Database Standard can minimize the costs. The correct answer is B.

This one is tough. While standard may seem like the obvious choice given the requirements, I feel that the question implies a level of urgency as far as being able to auto failover with no data loss. My gut says A, despite it costing more than standard.

Question #278

You plan to deploy two instances of SQL Server on Azure virtual machines in a highly available configuration that will use an Always On availability group.

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

- Provides a Service Level Agreement (SLA) of at least 99.95%
- Replicates databases in the same group synchronously
- Minimizes the latency of database writes

What should you recommend?

A) Create two proximity groups and two availability sets. Deploy each virtual machine to a unique availability set. Add one virtual machine to each proximity group.

B) Create a proximity group and an availability set. Deploy each virtual machine to the availability set. Add both virtual machines to the proximity group. (Correct Answer)

C) Create a proximity group and two availability sets. Deploy each virtual machine to a unique availability set. Add both virtual machines to the proximity group.

D) Create two proximity groups and a single availability set. Deploy both virtual machines to the availability set. Add one virtual machine to each proximity group.

Explanation

Correct Answer:

B

Community Discussion

Selected Answer: B

To get VMs as close as possible, achieving the lowest possible latency, you should deploy them within a proximity placement group. <https://learn.microsoft.com/en-us/azure/virtual-machines/co-location>

This configuration, along with the use of availability sets and proximity groups, helps achieve high availability and reliability while minimizing the latency of database writes. Additionally, the SLA of at least 99.95% can be met with this deployment solution.

answer is correct

NO UFRONT PAYMENT!! GET CERTIFIED. 1. COMPTIA (network+ security+) 2: GMAT,GRE exams 3: IAPP Certifications (CIPP/E CIPM, CIPT) 4: ISACA certifications (CISA,CISM / CRISC) 5. pass all Microsoft exams(AZURE,AWS) 6: CIA,IFRS, CERTIFICATIONS 7. APICS CERTIFICATIONS, CSCP, CPIM, CLTD Book for online proctor exam and we'll remotely take the exam for you. Pay us after confirmation of PASSED results ITTCA.org WhatsApp +1(409)223 7790

Question #279

You have a single availability set that contains two SQL Server on Azure Virtual Machines instances.

The instances were deployed by using an Azure Marketplace SQL Server 2019 Enterprise image that has the latest cumulative updates applied. The instances are configured as the nodes of a failover cluster instance (FCI) named FCI1.

You need to ensure that client applications can connect to FCI1. The solution must meet the following requirements:

- Provide an availability SLA.
- Minimize costs.

What should you create?

- A) an Azure Standard Load Balancer
- B) a virtual network name (VNN) resource
- C) a Basic Azure Load Balancer

D) a distributed network name (DNN) resource (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

You should create a distributed network name (DNN) resource 1. On Azure Virtual Machines, the DNN routes traffic to the appropriate clustered resource. It provides an easier way to connect to the SQL Server failover cluster instance (FCI) than the virtual network name (VNN), without the need for an Azure Load Balancer 1. So, the correct answer is D

Hi U_C, did you pass DP-300 exam? How many questions did you receive from here ?
Thanks

Hi U_C, did you pass DP-300 exam? How many questions did you receive from here ?
Thanks

I think they mentioned SLA just to divert us from the main requirement - "You need to ensure that client applications can connect to FCI1", so there are 2 nodes and they have VNN but you need sort of a DNS name (which is DNN here) to connect to the cluster. So D is a correct answer

Yep, The distributed network name (DNN) replaces the virtual network name (VNN) as the connection point when used with an Always On failover cluster instance on SQL Server VMs. This negates the need for an Azure Load Balancer routing traffic to the VNN, simplifying deployment, maintenance, and improving failover. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/failover-cluster-instance-distributed-network-name-dnn-configure?view=azuresql>

Question #280

DRAG DROP

You have an Azure subscription.

You need to deploy an Azure SQL managed instance by using an Azure Resource Manager (ARM) template. The solution must meet the following requirements:

- The SQL managed instance must be assigned a unique identity.
- The SQL managed instance must be available in the event of an Azure datacenter outage.

How should you complete the template? To answer, drag the appropriate values to the correct targets. Each value 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.

NOTE: Each correct selection is worth one point.

Values	Answer Area
"dnsZonePartner"	{
"storageAccountType"	"type": "Microsoft.Sql/managedInstances",
"SystemAssigned"	"-
"UserAssigned"	"}, "identity": {
"zoneRedundant"	"type": <input type="text"/>

The Answer Area JSON template continues:

```
{
    "type": "Microsoft.Sql/managedInstances",
    "-",
    },
    "identity": {
        "type": 
    },
    "dependsOn": [
        "[parameters('virtualNetworkName')]"
    ],
    "properties": {
        "administratorLogin": "[parameters('administratorLogin')]",
        "administratorLoginPassword": "[parameters('administratorLoginPassword')]",
        "subnetId": "[resourceId('Microsoft.Network/virtualNetworks/subnets',
            parameters('virtualNetworkName'), parameters('subnetName'))]",
        "storageSizeInGB": 8192,
        "vCores": 80,
        "licenseType": "BasePrice",
         : "True"
    }
}
```

Explanation

Correct Answer:

Answer Area

```
{  
    "type": "Microsoft.Sql/managedInstances",  
    "  
    },  
    "identity": {  
        "type": "SystemAssigned"  
    },  
    "dependsOn": [  
        "[parameters('virtualNetworkName')]"  
    ],  
    "properties": {  
        "administratorLogin": "[parameters('administratorLogin')]",  
        "administratorLoginPassword": "[parameters('administratorLoginPassword')]",  
        "subnetId": "[resourceId('Microsoft.Network/virtualNetworks/subnets',  
        "subnetId": "[resourceId('Microsoft.Network/virtualNetworks/subnets',  
        parameters('virtualNetworkName'), parameters('subnetName'))]", "storageSizeInGB": 8192,  
        "vCores": 80, "licenseType": "BasePrice",  
        "zoneRedundant" : "True"  
    }  
}
```

Community Discussion

1. SQL MI must be assigned a unique identity: system-assigned identities can only be assigned to one resource, so that naturally makes it a unique ID
2. SQL MI must be available if datacenter goes down: datacenter = availability zone So answer should be SystemAssigned, zoneRedundant

Question #281

You have an Azure subscription that contains two Azure SQL managed instances named SQLMI1 and SQLMI2. SQLMI1 contains a database named DB1 and a user named User1.

User1 drops DB1.

You need to perform a point-in-time restore of DB1 to SQLMI2.

What should you use to perform the restore?

- A) Azure CLI
- B) Transact-SQL
- C) the Azure portal (Correct Answer)**
- D) Azure PowerShell

Explanation

Correct Answer:

C

Community Discussion

C - the Azure portal.

<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/point-in-time-restore?view=azuresql-mi&tabs=azure-portal> You can use point-in-time restore to restore a database in these scenarios: From an existing database From a deleted database To the same managed instance or to a different managed instance To a managed instance in the same subscription or to a managed instance in a different subscription

AZ Portal is easier than other options

Question #282

You deploy an instance of SQL Server on Azure Virtual Machines: named SQL1 that hosts multiple databases.

You configure the full recovery model for all the databases.

You perform a full backup of the master database on SQL1.

You need to perform an additional backup of the master database on SQL1. The solution must minimize how long it takes to perform the backup.

Which type of backup should you perform?

- A) log
- B) full
- C) differential (Correct Answer)**
- D) tail-log

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: B

The correct answer: B Backups, only a full database backup can be performed on the master database. <https://learn.microsoft.com/en-us/sql/relational-databases/databases/master-database?view=sql-server-ver16>

answer is B. running differential/log backup will give you error: Msg 3024, Level 16, State 0, Line 1 You can only perform a full backup of the master database. Use BACKUP DATABASE to back up the entire master database. Msg 3013, Level 16, State 1, Line 1 BACKUP DATABASE is terminating abnormally.

Just did a quick test to backup the "master" database. No matter the "master" database is in full recovery mode or "simple recovery mode", you only can do a full database backup.
The correct answer is B.

Just did a quick test to backup the "master" database. No matter the "master" database is in full recovery mode or "simple recovery mode", you only can do a full database backup.
The correct answer is B.

Selected Answer: B

you can only do a full backup of the master db

Question #283

HOTSPOT

You have a SQL Server on Azure Virtual Machines instance that hosts a database named DB1.

You need to configure the autogrow and autoshrink settings for DB1.

Which statements should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Autogrow:

ALTER DATABASE MODIFY File and Filegroup options
 ALTER DATABASE SCOPED CONFIGURATION
 ALTER DATABASE SET options

Autoshrink:

ALTER DATABASE MODIFY File and Filegroup options
 ALTER DATABASE SCOPED CONFIGURATION
 ALTER DATABASE SET options

Explanation

Correct Answer:

Answer Area

Autogrow:

- ALTER DATABASE MODIFY File and Filegroup options
- ALTER DATABASE SCOPED CONFIGURATION
- ALTER DATABASE SET options

Autoshrink:

- ALTER DATABASE MODIFY File and Filegroup options
- ALTER DATABASE SCOPED CONFIGURATION
- ALTER DATABASE SET options

Community Discussion

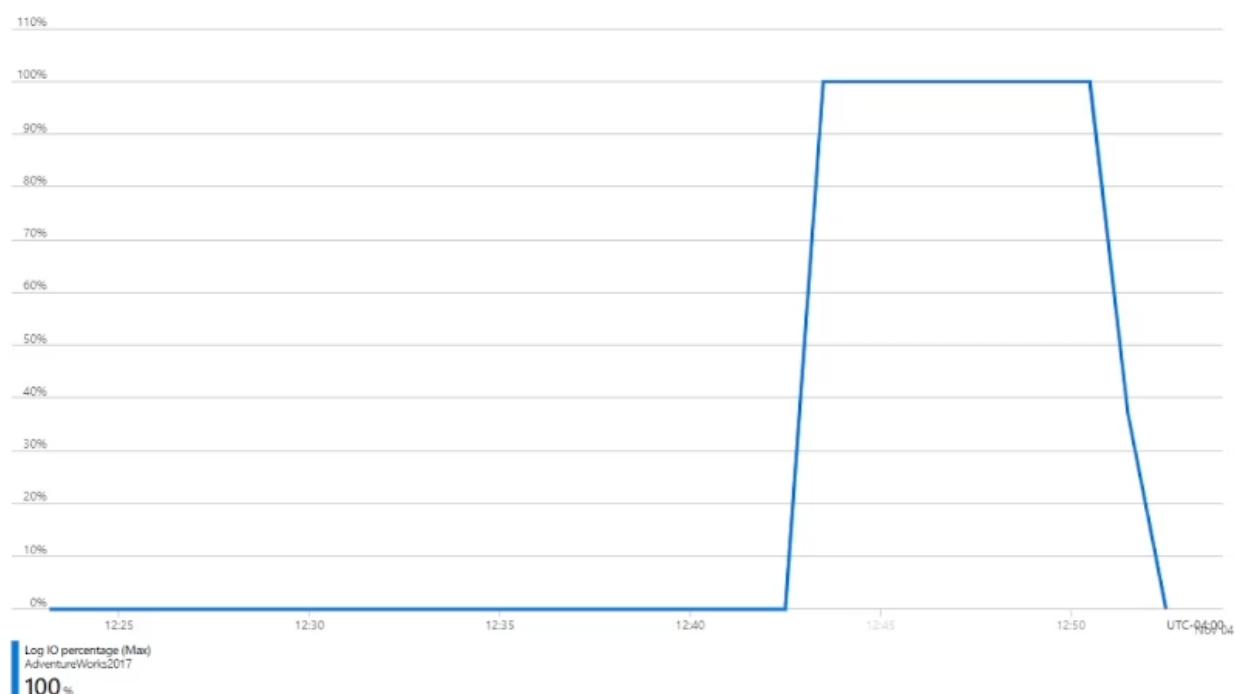
answer is correct. To configure the autogrow setting: java Copy code ALTER DATABASE DB1
MODIFY FILE (NAME = DB1_Data, FILEGROWTH = 10%) To configure the autoshrink setting:
sql Copy code ALTER DATABASE DB1 SET AUTO_SHRINK ON

correct

Question #284

You have an Azure SQL database named DB1 in the General Purpose service tier.

The performance metrics for DB1 are shown in the following exhibit.



You need to reduce the Log IO percentage. The solution must minimize costs.

What should you do?

A) Change Service tier to Business Critical. (Correct Answer)

- B) Increase the number of vCores.
- C) Perform a checkpoint operation.
- D) Change Recovery model to Simple.

Explanation

Correct Answer:

A

Community Discussion

C is correct answer, Azure SQL does not support Simple recovery model.

C is correct answer, Azure SQL does not support Simple recovery model.

since it is hitting max IOPS limitation and not storage space limits, upgrading to BC tier will increase max iops throughput . it won't obviously minimize the cost, but given the choices i think it is the only option

A. Change Service tier to Business Critical. - seems the only solution. B. Increase the number of vCores. - relates to MI being in the Business Critical already. it is not (<https://learn.microsoft.com/en-us/answers/questions/603214/log-io-metrics-is-hitting-100>) C. Perform a checkpoint operation. - usually for shrinking log files, not related to log performance being poor. if anything, will worsen the situation by flushing data from memory to disk. the operation has to be logged as well. D. Change Recovery model to Simple. - logging transactions is not related to recovery models, transaction log management is (log backups or not). irrelevant for the issue at hand.

<https://learn.microsoft.com/en-us/answers/questions/603214/log-io-metrics-is-hitting-100>

Question #285

You have an Azure SQL database named DB1 that contains a nonclustered index named index1.

End users report slow queries when they use index1.

You need to identify the operations that are being performed on the index.

Which dynamic management view should you use?

- A) Sys.dm_exec_query_plan_stats
- B) Sys.dm_db_index_physical_stats
- C) Sys.dm_db_index_operational_stats
- D) Sys.dm_db_index_usage_stats (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

C: dm_db_index_operational_stats provides: the information of leaf_insert_count, leaf_delete_count, leaf_update_count D: dm_db_index_usage_stats provides: the information of USER_SEEKS, USER_SCANS, USER_LOOKUPS, USER_UPDATES For the performance tuning, I choose D.

Selected Answer: D

D. sys.dm_db_index_usage_stats Every individual seek, scan, lookup, or update on the specified index by one query execution is counted as a use of that index and increments the corresponding counter in this view. Information is reported both for operations caused by user-submitted queries, and for operations caused by internally generated queries, such as scans for gathering statistics. <https://learn.microsoft.com/en-us/sql/relational-databases/system-dynamic-management-views/sys-dm-db-index-usage-stats-transact-sql?view=sql-server-ver16#remarks>

C is the right answer according to Bing Chat

Selected Answer: C

The correct answer is: C. Sys.dm_db_index_operational_stats This dynamic management view contains information about various operations performed on an index, including the number of seeks, inserts, updates, and deletes.

Question #286

HOTSPOT

You have an Azure SQL managed instance named SQLMI1 that hosts multiple databases.

You need to monitor the performance of SQLMI1 and identify which database uses the most memory and the most disk I/O.

Which objects should you query? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

For memory:

sys.dm_exec_query_stats
sys.dm_io_virtual_file_stats
sys.dm_os_buffer_descriptors
sys.dm_os_performance_counters

For disk I/O:

sys.dm_exec_query_stats
sys.dm_io_virtual_file_stats
sys.dm_os_buffer_descriptors
sys.dm_os_performance_counters

Explanation

Correct Answer:

Answer Area

For memory:

sys.dm_exec_query_stats
sys.dm_io_virtual_file_stats
sys.dm_os_buffer_descriptors
sys.dm_os_performance_counters

For disk I/O:

sys.dm_exec_query_stats
sys.dm_io_virtual_file_stats
sys.dm_os_buffer_descriptors
sys.dm_os_performance_counters

Community Discussion

For memory is sys.dm_os_buffer_descriptors. You can use this query to prove: SELECT DB_NAME(database_id) AS database_name, COUNT(*) * 8/1024.0 AS cached_MB FROM sys.dm_os_buffer_descriptors GROUP BY database_id ORDER BY cached_MB DESC; For I/O, the answer is correct. SELECT DB_NAME(database_id) AS database_name, SUM(num_of_reads + num_of_writes) AS total_io_operations FROM sys.dm_io_virtual_file_stats(NULL, NULL) AS virt_file_stats GROUP BY database_id ORDER BY total_io_operations DESC;

Question #287

You have a Microsoft SQL Server 2019 database named DB1 and an Azure SQL managed instance named SQLMI1.

You need to move a SQL Server Agent job from DB1 to SQLMI1.

Which job attribute is unsupported in SQLMI1?

- A) log to table
- B) email notifications
- C) schedules

D) output files (Correct Answer)**Explanation**

Correct Answer:

D

Community Discussion

Selected Answer: D

some limitations including Running a script stored as a file on disk is not supported.
<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql#sql-agent-job-limitations-in-sql-managed-instance>

<https://learn.microsoft.com/en-us/answers/questions/122544/azure-sql-managed-instance-sql-agent-job-output-st>

Selected Answer: D

<https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql>

Question #288

DRAG DROP

You create an Azure SQL managed instance and a job that performs backups.

You need to configure the job to notify a distribution group by email when the job fails. The solution must minimize administrative effort.

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.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Actions	Commands	Cmdlets	Statements	Answer Area
Configure Database Mail.				
Configure a job notification.				
Configure an alert.				
Configure SendGrid.				
Create an operator.				

Explanation

Correct Answer:

Answer Area

- Configure Database Mail.
- Create an operator.
- Configure a job notification.

Community Discussion

Correct 1)configure database mail 2) create an operator 3) configure a job notification

yep <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql>

yep <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql>

Question #289

You have an Azure SQL managed instance.

You need to configure the SQL Server Agent service to email job notifications.

Which statement should you execute?

- A) EXECUTE msdb.dbo.sysmail_add_profile_sp @profile_name = 'sysadmin_dbmail_profile';
- B) EXECUTE msdb.dbo.sysmail_add_profile_sp @profile_name = 'application_dbmail_profile';
- C) EXECUTE msdb.dbo.sysmail_add_profile_sp @profile_name = 'AzureManagedInstance_dbmail_profile'; (Correct Answer)**
- D) EXECUTE msdb.dbo.sysmail_add_profile_sp @profile_name = 'sys_dbmail_profile';

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: C

C is correct. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql#job-notifications>

Selected Answer: C

-- Add the account to the profile
EXECUTE msdb.dbo.sysmail_add_profileaccount_sp
@profile_name = 'AzureManagedInstance_dbmail_profile', @account_name = 'SQL Agent
Account', @sequence_number = 1;

Selected Answer: C

Correct. To send e-mail using SQL Agent jobs in SQL Managed Instance, there should be a profile that must be called AzureManagedInstance_dbmail_profile. Otherwise, SQL Managed Instance will be unable to send emails via SQL Agent. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/job-automation-managed-instance?view=azuresql#sql-agent-job-notifications>

Selected Answer: C

Correct

Question #290

You have an Azure SQL database named SQL1.

You need to implement a disaster recovery solution for SQL1. The solution must minimize the following:

- The recovery point objective (RPO)
- The recovery time objective (RTO)
- Administrative effort

What should you include in the solution?

- A) Azure Site Recovery
- B) active geo-replication
- C) availability groups
- D) auto-failover groups (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

Answer correct: <https://learn.microsoft.com/en-us/azure/azure-sql/database/business-continuity-high-availability-disaster-recover-hadr-overview?view=azuresql> Recovery method RTO RPO Geo-restore from geo-replicated backups 12 h 1 h Auto-failover groups 1 h 5 s Manual database failover 30 s 5 s Auto fail over groups gives the lesser RPO&RTO and less administrative effort than manual fail over.

Question #291

You need to recommend a disaster recovery solution for an on-premises Microsoft SQL Server database. The solution must meet the following requirements:

- Support real-time data replication to a different geographic region.
- Use Azure as a disaster recovery target.
- Minimize costs and administrative effort.

What should you include in the recommendation?

- A) database mirroring on an instance of SQL Server on Azure Virtual Machines
- B) availability groups for SQL Server on Azure Virtual Machines
- C) an Azure SQL Managed Instance link

D) transactional replication to an Azure SQL Managed Instance (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

As of August 2023, C will become the new answer (Managed Instance Link): <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/managed-instance-link-feature-overview?view=azuresql-mi>. It currently works as a DR solution ONLY for SQL Server 2022, so you need to pay attention to that aspect in the exam. If nothing else is specified, then D (replication) can be a solution. Mirroring and AlwaysON AGs: Mirroring is deprecated, so no go there. AG: can be a solution, but not minimizing costs and

administration. To conclude: D is the answer if no version is specified for SQL Server, C is the answer if the question will say we're talking SQL Server 2022.

Don't know if it'll work well with Managed Instance Link: Only user databases can be replicated. Replication of system databases isn't supported. The solution doesn't replicate server-level objects, agent jobs, or user logins from SQL Server to SQL Managed Instance. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/managed-instance-link-feature-overview?view=azuresql>

Don't know if it'll work well with Managed Instance Link: Only user databases can be replicated. Replication of system databases isn't supported. The solution doesn't replicate server-level objects, agent jobs, or user logins from SQL Server to SQL Managed Instance. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/managed-instance-link-feature-overview?view=azuresql>

Selected Answer: D

The best solution that I see is transactional replication.

I think C. The Managed Instance link feature uses distributed availability groups to extend your SQL Server on-premises Always On availability group hosted anywhere to Azure SQL Managed Instance in a safe and secure manner, replicating data in near real-time.

Question #292

You have an Azure subscription.

You need to deploy two instances of SQL Server on Azure virtual machines in a highly available configuration that will use an Always On availability group. The solution must meet the following requirements:

- Minimize how long it takes to fail over.
- Maintain existing connections to the primary replica during a failover.

What should you do?

- A) Connect each virtual machine to a different subnet on a virtual network. Deploy a basic Azure load balancer.
- B) Connect each virtual machine to a different subnet on a single virtual network.

C) Connect each virtual machine to a single subnet on a single virtual network. (Correct Answer)

D) Connect each virtual machine to a single subnet on a virtual network. Deploy a standard Azure load balancer.

Explanation

Correct Answer:

C

Community Discussion

it is B without a doubt, as singled out by kenn1234 and vcloudpmp. plus I have done this quite a number of times already: different subnets in the same VNET.

To match the on-premises experience for connecting to your availability group listener, deploy your SQL Server VMs to multiple subnets within the same virtual network. Having multiple subnets negates the need for the extra dependency on an Azure Load Balancer, or a distributed network name (DNN) to route your traffic to your listener. ref: <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/availability-group-overview?view=azuresql-vm#connectivity>

<https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/availability-group-load-balancer-portal-configure?view=azuresql-vm> There are many methods to deploy an availability group. Simplify your deployment and eliminate the need for an Azure Load Balancer or distributed network name (DNN) for your Always On availability group by creating your SQL Server virtual machines (VMs) in multiple subnets within the same Azure virtual network. If you've already created your availability group in a single subnet, you can migrate it to a multi-subnet environment.

Selected Answer: C

Answer C is correct because one of the requirements is to maintain existing connections to Primary replica during failover, which is only possible with DNN configuration and this setting works best when Azure SQL Server VMs to a single subnet. we can only go with OPTION C because option D has Azure standard load balancer in the choice which means you can not use DNN so, you either configure Azure Load balancer/VNN with single subnet OR configure DNN with single subnet. Option c meets the requirement, Hence clearly Answer is C. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/availability-group-overview?view=azuresql>

Selected Answer: C

Answer C is correct because one of the requirements is to maintain existing connections to Primary replica during failover, which is only possible with DNN configuration and this setting works best when Azure SQL Server VMs to a single subnet. we can only go with OPTION C because option D has Azure standard load balancer in the choice which means you can not use DNN so, you either configure Azure Load balancer/VNN with single subnet OR configure DNN with single subnet. Option c meets the requirement, Hence clearly Answer is C

Question #293

You have an Azure SQL database.

You need to implement a disaster recovery solution that meets the following requirements:

- Minimizes how long it takes to recover the database if a datacenter fails
- Minimizes administrative effort

What should you include in the solution?

- A) Azure Site Recovery
- B) active geo-replication
- C) auto-failover groups (Correct Answer)**
- D) Azure Backup

Explanation

Correct Answer:

C

Community Discussion

Selected Answer: C

correct

Question #294

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

- A) Azure SQL Database managed instance General Purpose
- B) Azure SQL Database Hyperscale
- C) Azure SQL Database Premium (Correct Answer)**
- D) Azure SQL Database managed instance Business Critical

Explanation

Correct Answer:

C

Community Discussion

Question #295

HOTSPOT

You have an Azure subscription that contains a resource group named RG1. RG1 contains an instance of SQL Server on Azure Virtual Machines named SQ1.

You need to use PowerShell to enable and configure automated patching for SQ1. The solution must include both SQL Server and Windows security updates.

How should you complete the command? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
$AutoPatchingConfig = New-AzVMSqlServerAutoPatchingConfig -Enable  
-DayOfWeek "Sunday" -MaintenanceWindowStartingHour 2  
-MaintenanceWindowDuration 120 -PatchCategory "Important"
```

```
Get-AzVM -ResourceGroupName "RG1" -Name "SQ1" |
```

Get-AzVMSQLServerExtension
Set-AzVMExtension
Set-AzVMSqlServerExtension

```
-AutoPatchingSettings $AutoPatchingConfig | Update-AzVM
```

```
-SQLManagementType
```

-Full
-Lightweight
-NoAgent

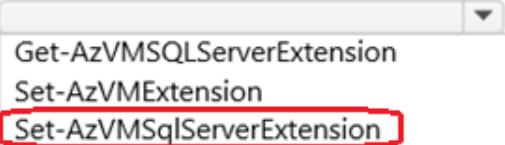
Explanation

Correct Answer:

Answer Area

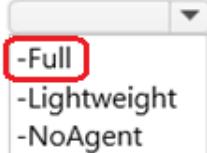
```
$AutoPatchingConfig = New-AzVMSqlServerAutoPatchingConfig -Enable  
-DayOfWeek "Sunday" -MaintenanceWindowStartingHour 2  
-MaintenanceWindowDuration 120 -PatchCategory "Important"
```

```
Get-AzVM -ResourceGroupName "RG1" -Name "SQ1" |
```



```
-AutoPatchingSettings $AutoPatchingConfig | Update-AzVM
```

```
-SQLManagementType
```

**Community Discussion**

Correct: Box 1: Set-AzVMSqlServerExtension, SQL in lowercase. Box 2: Full. SQL IAAS Extension only allows patching automatically in Full mode. Lightway gives a few metrics and NoAgent is for older versions. <https://learn.microsoft.com/en-us/powershell/module/az.compute/set-azvmsqlserverextension?view=azps-9.7.0>

Question #296

HOTSPOT

You have an Azure subscription that contains an instance of SQL Server on Azure Virtual Machines. The virtual machine hosts a database named DB1.

You need to monitor DB1 by using Extended Events. The solution must meet the following requirements:

- Capture raw event data and store the data in Azure Storage.
- Minimize the performance impact of capturing extended events.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
CREATE EVENT SESSION session1 ON DATABASE
  ADD EVENT sqlserver.sql_statement_starting
    (
      ACTION (sqlserver.sql_text)
      WHERE statement LIKE 'UPDATE gmTabEmployee%'
    )
  ADD TARGET
    package0.event_file
    package0.event_stream
    package0.ring_buffer
  (
    SET filename = 'https://gmstorageaccountxevent.blob.core.windows.net/gmcontainerxevent/anyfilename\xel242b.xel'
  )
  WITH
    (MAX_MEMORY = 10 MB,
     EVENT_RETENTION_MODE=
      ALLOW_MULTIPLE_EVENT_LOSS
      ALLOW_SINGLE_EVENT_LOSS
      NO_EVENT_LOSS
    )
    MAX_DISPATCH_LATENCY = 3 SECONDS)
```

Explanation

Correct Answer:

Answer Area

```
CREATE EVENT SESSION session1 ON DATABASE
    ADD EVENT sqlserver.sql_statement_starting
    (
        ACTION (sqlserver.sql_text)
        WHERE statement LIKE 'UPDATE gmTabEmployee%'
    )
    ADD TARGET
        package0.event_file
        event_stream
        ring_buffer
    (
        SET filename = 'https://gmstorageaccountxevent.blob.core.windows.net/gmcontainerxevent/anyfilename\xel242b.xel'
    )
    WITH
        (MAX_MEMORY = 10 MB,
        EVENT_RETENTION_MODE=
            ALLOW_MULTIPLE_EVENT_LOSS
            ALLOW_SINGLE_EVENT_LOSS
            NO_EVENT LOSS
        MAX_DISPATCH_LATENCY = 3 SECONDS)
```

Community Discussion

<https://learn.microsoft.com/en-us/azure/azure-sql/database/xevent-db-diff-from-svr?view=azuresql-mi> Event File target code for extended events in Azure SQL Database
Phase 1 is PowerShell to create an Azure Storage container. Phase 2 is Transact-SQL that uses the Azure Storage container.

```
CREATE EVENT SESSION [YourSession] ON SERVER ADD EVENT
    sqlserver.sql_statement_completed ( ACTION(sqlserver.sql_text) WHERE ( [sqlserver].
    [like_i_sql_unicode_string]([sqlserver].[sql_text], N'%SELECT%HAVING%') ) ) ADD TARGET
    package0.event_file (SET filename = N'C:\Junk\YourSession_Target.xel'; max_file_size = (2),
    max_rollover_files = (2) ) WITH ( MAX_MEMORY = 2048 KB, EVENT_RETENTION_MODE =
    ALLOW_MULTIPLE_EVENT_LOSS, MAX_DISPATCH_LATENCY = 3 SECONDS, MAX_EVENT_SIZE =
    0 KB, MEMORY_PARTITION_MODE = NONE, TRACK_CAUSALITY = OFF, STARTUP_STATE = OFF );
```

GO <https://learn.microsoft.com/en-us/sql/relational-databases/extended-events/quick-start-extended-events-in-sql-server?view=sql-server-ver16>

Question #297

You have an Azure SQL database named DB1.

You need to query the fragmentation information of data and indexes for the tables in DB1.

Which command should you run?

- A) sys.dm_db_index_usage_stats
- B) DBCC CHECKALLOC
- C) DBCC SHOWCONTIG
- D) sts.dm_db_index_physical_stats (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Selected Answer: D

it's misspelled, sys.dm_db_index_physical_stats

Question #298

You have an Azure subscription that contains 20 Azure SQL databases.

You create a Transact-SQL statement to perform index maintenance on a database.

You need to schedule the statement to run once daily against each database by using Transact-SQL commands.

What should you use to schedule the statement?

- A) an Azure function
- B) a SQL Server Agent Job
- C) an elastic job

D) Azure Automation (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

An Azure SQL database has no associated SQL Agent, so this can't be correct

An Azure SQL database has no associated SQL Agent, so this can't be correct

the sad part is both Elastic Job and Azure Automation are valid responses (both can run T-SQL commands). I will go with Elastic Job for the sole reason that is free (as of 2023) and Azure Automation seems overkill for the task at hand - not only that, but it seems that it cannot reindex multiple DBs at once, for example. Proof that Azure Automation can also run reindex jobs: <https://learn.microsoft.com/en-us/azure/automation/overview>: "Common scenarios Azure Automation supports management throughout the lifecycle of your infrastructure and applications. Common scenarios include: Periodic maintenance - to execute tasks that need to be performed at set timed intervals like purging stale or old data, or reindex a SQL database"

Selected Answer: C

On Azure SQL Database elastic jobs is a replacement for SQL Server Agent. Elastic Jobs can do TSQL scheduled jobs. <https://learn.microsoft.com/en-us/azure/azure-sql/database/job-automation-overview?view=azuresql>

Azure Automation uses PowerShell. With Azure Automation, you can manage databases in Azure SQL Database by using the latest Az PowerShell cmdlets that are available in Azure Az PowerShell. Elastic jobs would use T-SQL. <https://learn.microsoft.com/en-us/azure/azure-sql/database/elastic-jobs-tsql-create-manage?view=azuresql-db>

Question #299

HOTSPOT

You have an Azure subscription.

You need to deploy a logical SQL server by using an Azure Resource Manager (ARM) template. The solution must ensure that the server will allow inbound connectivity from any Azure resource.

How should you complete the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
"resources": [
    {
        "type": "Microsoft.Sql/servers",
        ...
    },
    {
        "type": "Microsoft.Sql/servers/firewallRules",
        "apiVersion": "2021-02-01-preview",
        "name": "[concat(parameters('servers_a400m10102_name'), '/AllowAllWindowsAzureIps')]",
        "dependsOn": [
            "[resourceId('Microsoft.Sql/servers', parameters('servers_a400m10102_name'))]"
        ],
        "properties": {
            "startIpAddress": 
            "endIpAddress": 
        }
    }
]
```

Explanation

Correct Answer:

Answer Area

```
"resources": [
  {
    "type": "Microsoft.Sql/servers",
    ...
  },
  {
    "type": "Microsoft.Sql/servers/firewallRules",
    "apiVersion": "2021-02-01-preview",
    "name": "[concat(parameters('servers_a400m10102_name'), '/AllowAllWindowsAzureIps')]",
    "dependsOn": [
      "[resourceId('Microsoft.Sql/servers', parameters('servers_a400m10102_name'))]"
    ],
    "properties": {
      "startIpAddress": "0.0.0.0"
      "endIpAddress": "255.255.255.255"
    }
  }
]
```

**Community Discussion**

<https://learn.microsoft.com/en-us/azure/templates/microsoft.sql/servers/firewallrules?pivots=deployment-language-bicep> startIpAddress The start IP address of the firewall rule. Must be IPv4 format. Use value '0.0.0.0' for all Azure-internal IP addresses.

Question #300

You are modifying an existing disaster recovery solution for an Azure SQL managed instance that contains a failover group named FG1.

You need to ensure the maximum in-transit time for FG1 when an automatic failover occurs.

What should you configure?

- A) an availability group
- B) a secondary managed instance

C) a failover policy

D) a grace period (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

Question #301

You have an Azure subscription that contains three instances of SQL Server on Azure Virtual Machines.

You plan to implement a disaster recovery solution.

You need to be able to perform disaster recovery drills regularly. The solution must meet the following requirements:

- Minimize administrative effort for the recovery drills.
- Isolate the recovery environment from the production environment

What should you use?

A) native Microsoft SQL Server backup

B) Azure Site Recovery (Correct Answer)

C) Recovery Services vaults

D) Azure Backup

Explanation

Correct Answer:

B

Community Discussion

Selected Answer: B

Seems to be the correct answer

Question #302

You have an instance of SQL Server on Azure Virtual Machines named VM1.

You need to implement a disaster recovery solution that meets the following requirements:

- Returns the solution to an operational state within 15 minutes of a failure
- Can perform disaster recovery testing in an isolated environment
- Minimizes administrative effort

What should you include in the solution?

- A) active geo-replication
- B) auto-failover groups
- C) Azure Site Recovery (Correct Answer)**
- D) a failover cluster instance (FCI)

Explanation

Correct Answer:

C

Community Discussion

Answer is C. Azure Site Recovery RTO comparison with BCDR options: <https://learn.microsoft.com/en-us/azure/site-recovery/site-recovery-sql#combining-bcdr-technologies-with-site-recovery> Performing Isolated disaster recovery tests: <https://learn.microsoft.com/en-us/azure/site-recovery/site-recovery-test-failover-to-azure> However, Site Recovery is not automatic, as it must be initiated manually. We can however use scripts and runbooks to automate tasks during failover. The second link

also describes this. Incorrect: Active geo-replication - Is a feature of Azure SQL Database and is not for VM's Auto-failover Groups - Is a feature of Azure SQL Database and Managed Instance, not for VM's. A Failover cluster instance - Does provide automated failover to another node in the cluster, and the node can be located in another region. But it does not provide a way to perform DR in an isolated environment.

Replication with Azure Site Recover: ↪ RTO is typically less than 15 minutes. ↪ RPO: One hour for application consistency and five minutes for crash consistency. Always On availability group RPO: Because replication to the secondary replica is asynchronous, there's some data loss. Reference: <https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-sql>

Question #303

You plan to deploy an Azure SQL managed instance.

You need to restore database backups across regions.

Which type of storage account should you use?

- A) locally-redundant storage (LRS)
- B) zone-redundant storage (ZRS)
- C) geo-zone-redundant storage (GZRS)
- D) geo-redundant storage (GRS) (Correct Answer)**

Explanation

Correct Answer:

D

Community Discussion

Question #304

You have an Azure virtual machine named VM1 that runs Windows Server 2022 and hosts a Microsoft SQL Server 2019 instance named SQL1.

You need to configure SQL1 to use mixed mode authentication.

Which procedure should you run?

- A) sp_addremotelogin
- B) xp_instance_regwrite (Correct Answer)**
- C) sp_change_users_login
- D) xp_grant_login

Explanation

Correct Answer:

B

Community Discussion

```
https://learn.microsoft.com/en-us/sql/database-engine/configure-windows/change-server-authentication-mode?view=sql-server-ver16 USE [master] GO EXEC xp_instance_regwrite N'HKEY_LOCAL_MACHINE', N'Software\Microsoft\MSSQLServer\MSSQLServer', N'LoginMode', REG_DWORD, 1; GO
```

What is mixed mode authentication in SQL? There are two possible modes: Windows Authentication mode and mixed mode. Windows Authentication mode enables Windows Authentication and disables SQL Server Authentication. Mixed mode enables both Windows Authentication and SQL Server Authentication. Windows Authentication is always available and cannot be disabled. Feb 28, 2023 Choose an Authentication Mode - SQL Server | Microsoft Learn Microsoft <https://learn.microsoft.com> > Learn > SQL > SQL Server

Question #305

You have an Azure SQL managed instance named SQLMI1 that has the following settings:

- vCores: 4
- Service tier: General Purpose
- Hardware generation: Standard-series (Gen5)

You discover that memory pressure on SQLMI1 is high.

You need to reduce the memory pressure on SQLMI1. The solution must minimize costs.

What should to do?

- A) Enable the Query Store.
- B) Change vCores to 8. (Correct Answer)**
- C) Change Hardware generation to Premium-series.
- D) Change Service tier to Business Critical.

Explanation

Correct Answer:

B

Community Discussion

Answer should be: C. Change Hardware generation to Premium-series. Business critical tier would be too expensive compared to changing the hardware type. Also, changing the number of vcores would not resolve any memory-related issues.

The correct answer is (A). The Query Store option is a cost-effective way to reduce memory pressure on a managed Azure SQL instance. The Query Store stores temporary data used by queries in the cloud, reducing the memory requirements of the managed Azure SQL instance.

Selected Answer: A

I think it should be A.

Sorry forgot one last thing on hardware type: standard series comes with less memory compared to premium-series. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/resource-limits?view=azuresql>

Memory for StandardSeries(Gen5) is 5.1 GB per vCore . Doubling the cores doubles the memory too.

Question #306

HOTSPOT

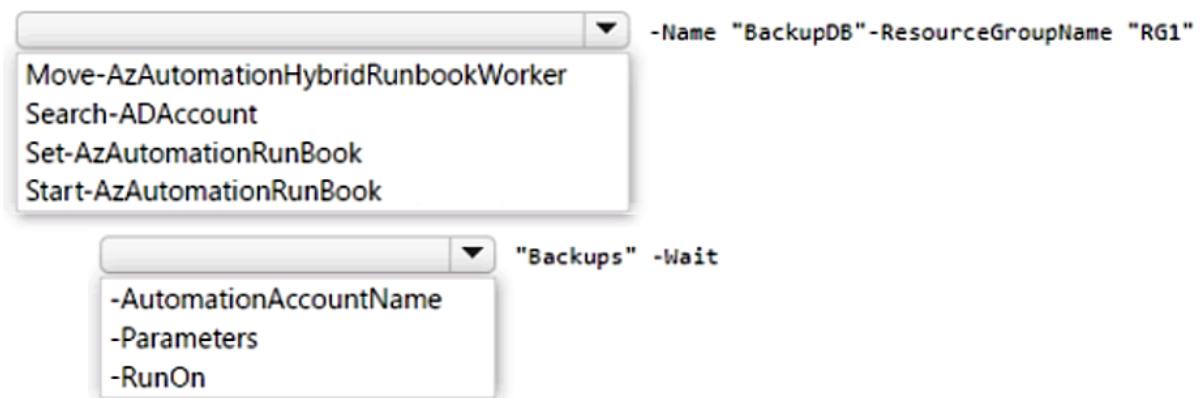
You have an instance of SQL Server on Azure Virtual Machines named VM1.

You need to use an Azure Automation runbook to initiate a SQL Server database backup on VM1.

How should you complete the command? To answer, select the appropriate options in the answer area.

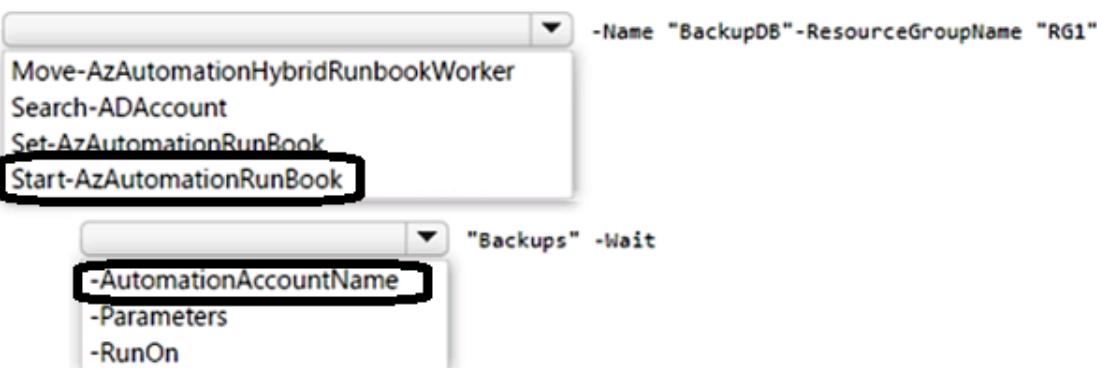
NOTE: Each correct selection is worth one point.

Answer Area



Explanation

Correct Answer:

Answer Area**Community Discussion**

that is correct

<https://learn.microsoft.com/en-us/powershell/module/az.automation/start-azautomationrunbook?view=azps-12.5.0> EXAMPLE: Start-AzAutomationRunbook -AutomationAccountName "Contoso17" -Name "Runbk01" -ResourceGroupName "ResourceGroup01" -MaxWaitSeconds 1000 -Wait

Start-AzAutomationRunbook -Name \$Runbook -ResourceGroupName \$rg -AutomationAccountName \$Account -Wait It is not "optimal" but It will work

Question #307

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

A) Azure SQL Database Premium (Correct Answer)

- B) Azure SQL Database Basic
- C) Azure SQL Database managed instance General Purpose

D) Azure SQL Database Hyperscale

Explanation

Correct Answer:

A

Community Discussion

Question #308

You have an Azure subscription that contains two instances of SQL Server on Azure Virtual Machines named VM1 and VM2. Both instances run Microsoft SQL Server 2019 CU8.

You need to deploy a failover cluster instance (FCI) to VM1 and VM2. The solution must eliminate the need for the following:

- A distributed network name (DNN)
- A load balancer

What should you do?

- A) Deploy VM1 and VM2 to a single proximity placement group.
- B) Deploy VM1 and VM2 to different proximity placement groups in the same Azure region.
- C) Connect VM1 and VM2 to a single subnet.

D) Connect VM1 and VM2 to different subnets on a single virtual network. (Correct Answer)

Explanation

Correct Answer:

D

Community Discussion

To match the on-premises experience for connecting to your availability group listener, deploy your SQL Server VMs to multiple subnets within the same virtual network. Having multiple subnets negates the need for the extra dependency on an Azure Load Balancer, or a distributed network name (DNN) to route your traffic to your listener. <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/availability-group-overview?view=azuresql>

Check <https://learn.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/failover-cluster-instance-distributed-network-name-dnn-configure?view=azuresql>

Question #309

HOTSPOT

-

You have an Azure subscription that contains a storage account named databasebackups.

You have an Azure SQL managed instance named DB1.

You need to back up DB1 to databasebackups.

How should you complete the commands? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
CREATE CREDENTIAL  
[https://databasebackups.blob.core.windows.net/Backups]  
WITH IDENTITY =  
      'DatabaseBackups'  
      'KeyVault1'  
      'SHARED ACCESS SIGNATURE'  
  
SECRET = 'sp=r&st=2023-02-02T19:23:08Z&se=2033-02-  
02T19:30:08Z&spr=https&sv=2021-06-  
08&sr=b&sig=B%2FxEYQiOC%4BqyYCeqWHSz2QpRI%2FKcg3ZABz78J2kix3JZjk%3D'
```

```
BACKUP DATABASE DB1  
TO URL =  
  'https://databasebackups.blob.core.windows.net/Backups/db1.bak'  
WITH  
      CHECKSUM  
      COMPRESSION  
      COPY_ONLY  
      DIFFERENTIAL
```

Explanation

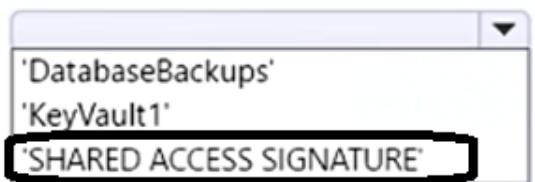
Correct Answer:

Answer Area

```
CREATE CREDENTIAL
```

```
[https://databasebackups.blob.core.windows.net/Backups]
```

```
WITH IDENTITY =
```



```
SECRET = 'sp=r&st=2023-02-02T19:23:08Z&se=2033-02-
```

```
02T19:30:08Z&spr=https&sv=2021-06-
```

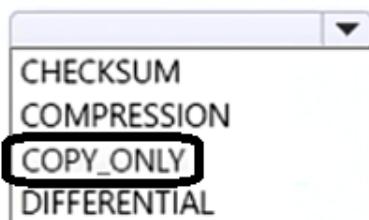
```
08&sr=b&sig=B%2FxEYQiOC%4BqyYCeqWHSz2QpRI%2FKcg3ZABz78J2kix3JZjk%3D'
```

```
BACKUP DATABASE DB1
```

```
TO URL =
```

```
'https://databasebackups.blob.core.windows.net/Backups/db1.bak'
```

```
WITH
```

**Community Discussion**

SAS makes sense, can anyone confirm that back would be to the url with "COPY_ONLY"? I am still searching for the correct answer, but I feel that it could be with CHECKSUM

Keyword for checksum would be for online migration

Keyword for checksum would be for online migration

SQL Manage Instances support only copy only backups

SAS + COPY_ONLY, full tutorial here: <https://techcommunity.microsoft.com/blog/azuresqlblog/how-to-take-secure-on-demand-backups-on-sql-managed-instance/3638369>

Question #310

You have an Azure SQL database named DB1.

You need to ensure that DB1 will support automatic failover without data loss if a datacenter fails. The solution must minimize costs.

Which deployment option and pricing tier should you configure?

A) Azure SQL Database Premium (Correct Answer)

- B) Azure SQL Database serverless
- C) Azure SQL Database managed instance General Purpose
- D) Azure SQL Database Hyperscale

Explanation

Correct Answer:

A

Community Discussion

Question #311

SIMULATION

-

You need to configure db1 to pause automatically after one hour of inactivity.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Azure SQL elastic pool pausing feature

An elastic pool vCore provisioned server can be paused. You can do this by changing the compute tier of the elastic pool to Serverless. In the serverless compute tier, the database is automatically paused when it is inactive for a period of time that you specify. The database is automatically resumed when the next login or other activity occurs.

Part 1: Change to the serverless compute tier

To change the compute tier of an elastic pool, you can follow these steps:

Step 1: Go to the Azure portal and sign in to your account.

Step 2: Select the Azure SQL resource that contains the elastic pool.

Step 3: In the left navigation menu, select Elastic Pools.

Step 4: Select the elastic pool that you want to change the compute tier for.

Step 5: In the Settings section, select Compute Tier.

Step 6: Select Serverless.

Step 7: Click Save.

Part 2: Configure the Auto-pause setting.

Step 1: Select db1.

Once you have changed the compute tier to serverless, the database will be paused after the idle time that you specified. You can view the idle time in the Auto-pause delay setting.

Step 2: Open database settings.

Step 3: Change the Auto-pause delay setting to 1 hour.

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/serverless-tier-overview>

<https://learn.microsoft.com/en-us/azure/azure-sql/database/single-database-create-quickstart>

Community Discussion

Question #312

SIMULATION

You need to ensure that any enhancements made to the Query Optimizer through patches are available to db1 and db2 on sql12345678.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Stored procedure execution

You can use the SQL Server Management Studio (SSMS) user interface or Transact-SQL in an SSMS query window to execute a stored procedure. Always use the latest version of SSMS.

Use SQL Server Management Studio

Step 1: In Object Explorer, connect to an instance of SQL Server or Azure SQL Database [here sql12345678], expand that instance, and then expand Databases.

Step 2: Expand the database that you want [Here first db1], expand Programmability, and then expand Stored Procedures.

Step 3: Right-click the stored procedure that you want to run [Here: ALTER DATABASE SCOPED CONFIGURATION] and select Execute Stored Procedure.

Step 4: Add parameter: QUERY_OPTIMIZER_HOTFIXES = ON

Step 5: Select OK to execute the stored procedure. If the stored procedure doesn't have any parameters, just select OK.

Step 6: Repeated step 2 to step 5 for db2.

Note: The default approach that SQL Server uses for the query optimizer enables any fixes for the latest database compatibility level for a given product release. This means any fixes for the query optimizer will be used up to the compatibility level of the database, but any hotfixes beyond that compatibility level will not be used. Microsoft provides an option to enable query optimizer hotfixes using the scoped configuration QUERY_OPTIMIZER_HOTFIXES.

Use the following command to enable optimizer hotfixes:

```
ALTER DATABASE SCOPED CONFIGURATION QUERY_OPTIMIZER_HOTFIXES = ON;
```

This command configures the database to use all query optimizer hotfixes. For example, optimizations that were included in a recent database cumulative update will apply if the administrator has altered the scope to include query optimizer hotfixes. Using QUERY_OPTIMIZER_HOTFIXES applies at the database level, meaning the change would have to be made for each database.

Reference:

<https://infohub.delltechnologies.com/en-US/l/performance-best-practices-4/sql-server-2019-query-optimizer-hotfixes>

<https://learn.microsoft.com/en-us/sql/t-sql/statements/alter-database-scoped-configuration-transact-sql>

Community Discussion

Question #313

SIMULATION

-

You plan to create an automation runbook that will create database users in db1 from Azure AD identities.

You need to configure sql12345678 to support the creation of new database users.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

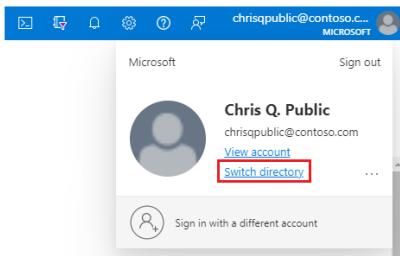
Correct Answer:

Provision Microsoft Entra admin (SQL Managed Instance)

Your SQL Managed Instance needs permission to read Microsoft Entra ID to accomplish tasks such as authentication of users through security group membership or creation of new users. For this to work, you must grant the SQL Managed Instance permission to read Microsoft Entra ID. You can do this using the Azure portal or PowerShell.

To grant your SQL Managed Instance read permissions to Microsoft Entra ID using the Azure portal, sign in as a Global Administrator and follow these steps:

Step 1: In the Azure portal, in the upper-right corner select your account, and then choose Switch directories to confirm which directory is your Current directory. Switch directories, if necessary.



Step 2: Choose the correct Microsoft Entra directory as the Current directory.

This step links the subscription associated with Microsoft Entra ID to the SQL Managed Instance, ensuring the Microsoft Entra tenant and SQL Managed Instance use the same subscription.

Step 3: Now, you can choose your Microsoft Entra admin for your SQL Managed Instance. For that, go to your managed instance resource in the Azure portal and select Microsoft Entra admin under Settings.

The screenshot shows the Microsoft Azure portal interface for managing a SQL Managed Instance named CH1-SQLMI. The left sidebar lists various management options like Activity log, Access control (IAM), Tags, Diagnose and solve problems, Quick start, November 2022 feature wave, Compute + storage, Connection strings, Maintenance, and Microsoft Entra admin. The Microsoft Entra admin option is highlighted with a red box. The main content area displays the Microsoft Entra admin configuration, including sections for Microsoft Entra authentication only and Microsoft Purview access policies. A banner at the top of the page reads "Grant permissions".

Step 4: Select the banner on top of the Microsoft Entra admin page and grant permission to the current user.

Grant permissions

Managed Instance needs permissions to access Microsoft Entra. You need to be a "Company Administrator" or a "Global Administrator" to grant "Read" permissions to the Managed Instance.

Grant permissions

Step 5: After the operation succeeds, the following notification will show up in the top-right corner:



Note: Microsoft Entra authentication uses identities in Microsoft Entra ID to access data sources such as Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics. The Microsoft.Data.SqlClient namespace allows client applications to specify Microsoft Entra credentials in different authentication modes when they're connecting to Azure SQL Database and Azure SQL Managed Instance. To use Microsoft Entra authentication with Azure SQL, you must configure and manage Microsoft Entra authentication with Azure SQL.

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/authentication-aad-configure>
<https://learn.microsoft.com/en-us/sql/connect/ado-net/sql/azure-active-directory-authentication>

Community Discussion

Question #314

SIMULATION

- You plan to perform performance testing of db1.

You need prevent db1 from reverting to the last known good query plan.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Automatic tuning options

The automatic tuning options available in Azure SQL Database and Azure SQL Managed Instance are:

* FORCE LAST GOOD PLAN (automatic plan correction)

Identifies Azure SQL queries using an execution plan that is slower than the previous good plan, and forces queries to use the last known good plan instead of the regressed plan.

* Etc.

You can either manually apply tuning recommendations using the Azure portal, or you can let automatic tuning autonomously apply tuning recommendations for you.

Azure defaults are set to FORCE_LAST_GOOD_PLAN enabled.

We need to disable it.

With transact-SQL:

ALTER DATABASE SET options (Transact-SQL)

Parameters include:

```
<automatic_tuning_option> ::=  
{  
    AUTOMATIC_TUNING ( FORCE_LAST_GOOD_PLAN = { DEFAULT | ON | OFF } )  
}
```

Solution with T-SQL

Stored procedure execution

You can use the SQL Server Management Studio (SSMS) user interface or Transact-SQL in an SSMS query window to execute a stored procedure. Always use the latest version of SSMS.

Use SQL Server Management Studio

Step 1: In Object Explorer, connect to an instance of SQL Server or Azure SQL Database, expand that instance, and then expand Databases.

Step 2: Expand the database that you want, expand Programmability, and then expand Stored Procedures.

Step 3: Right-click the stored procedure that you want to run [here: ALTER DATABASE SET] and select Execute Stored Procedure.

Step 4: Set the parameters: AUTOMATIC_TUNING (FORCE_LAST_GOOD_PLAN = { OFF })

Step 5: Select OK to execute the stored procedure. If the stored procedure doesn't have any parameters, just select OK.

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-overview>

<https://learn.microsoft.com/en-us/sql/t-sql/statements/alter-database-transact-sql-set-options>

<https://learn.microsoft.com/en-us/sql/relational-databases/stored-procedures/execute-a-stored-procedure>

Question #315

SIMULATION

You have a legacy application written for Microsoft SQL Server 2012. The application will be the only application that accesses db1.

You need to ensure that db1 is compatible with all the features and syntax of SQL Server 2012.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

View or change the compatibility level of a database

You can view or change the compatibility level of a database in SQL Server, Azure SQL Database, or Azure SQL Managed Instance by using SQL Server Management Studio or Transact-SQL.

Use SQL Server Management Studio

To view or change the compatibility level of a database using SQL Server Management Studio (SSMS)

Step 1: Connect to the appropriate server or instance hosting your database [Here db1].

Step 2: Select the server name in Object Explorer.

Step 3: Expand Databases, and, depending on the database, either select a user database or expand System Databases and select a system database.

Step 4: Right-click the database, and then select Properties.

The Database Properties dialog box opens.

Step 5: In the Select a page pane, select Options.

The current compatibility level is displayed in the Compatibility level list box.

Step 6: To change the compatibility level, select a different option from the list [Select SQL Server 2012]

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/databases/view-or-change-the-compatibility-level-of-a-database>

Community Discussion

Question #316

SIMULATION

You need to add an Azure AD user named [\[email protected\]](#) to db1.

User2-12345678 must be able to read data from all the tables in db1 without being able to modify the data.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Stage 1: Create the user

Create a user with SSMS (SQL Server Management Studio)

Step 1: In Object Explorer, expand the Databases folder.

Step 2: Expand the database in which to create the new database user. [Here db1]

Step 3: Right-click the Security folder, point to New, and select User....

Step 4: In the Database User - New dialog box, on the General page, select one of the following user types from the User type list:

SQL user with login

SQL user with password (when contained database is enabled)

SQL user without login

User mapped to a certificate

User mapped to an asymmetric key

*-> Windows user

Step 4a: Select Windows User

Step 5: When you select an option, the remaining options in the dialog may change. Some options only apply to specific types of database users. Some options can be left blank and will use a default value.

User name

Enter a name for the new user. If you have chosen Windows user from the User type list, you can also select the ellipsis (...) to open the Select User or Group dialog box. [Specify User2-12345678]

Step 6: Select OK.

Stage 2: Assign permissions

Additional Options

The Database User - New dialog box also offers options on four other pages: Owned Schemas, Membership, Securables, and Extended Properties.

Step 7: Select Securables

The Securables page lists all possible securables and the permissions on those securables that can be granted to the login.

Step 8: Select tables

Step 9: Grant Read Permission

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/security/authentication-access/create-a-database-user>

Community Discussion

Could also grant the user the db_datareader fixed database role which would allow all tables to be read without the ability to modify the data.

Question #317

SIMULATION

-

You need to ensure that db1 supports a minimum of one vCore, a maximum of four vCores, and a database of up to 45 GB.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

vCore purchasing model - Azure SQL Database

Select hardware configuration

You can select hardware configuration for a database or elastic pool in SQL Database at the time of creation. You can also change hardware configuration of an existing database or elastic pool.

To select a hardware configuration when creating a SQL Database or pool

Step 1: Start Azure portal

Step 2: Go the Azure SQL page, select db1.

Step 3: On the Overview page, select the Pricing tier link:

The screenshot shows the Azure portal interface for managing a SQL database named 'contoso'. In the main pane, under the 'Essentials' section, the 'Pricing tier' is listed as 'General Purpose: Standard-series (Gen5) 2 vCores'. This specific field is highlighted with a red box. The left sidebar contains navigation links like Overview, Activity log, Tags, Diagnose and solve problems, Getting started, Query editor, Settings, and Compute + storage.

Step 4: Select the Change configuration link:

The screenshot shows the 'Create SQL Database' configuration page. Under the 'Service and compute tier' section, the 'Service tier' dropdown is set to 'General Purpose (Most budget friendly, Serverless compute)' and the 'Compute tier' dropdown is set to 'Provisioned'. In the 'Compute Hardware' section, the 'Hardware Configuration' dropdown is set to 'Standard-series (Gen5)' with a note 'up to 80 vCores, up to 415.23 GB memory'. The 'Change configuration' button is highlighted with a red box. A cost summary panel on the right shows 'General Purpose (GP_Gen5_2)', 'Cost per vCore (in USD)', 'vCores selected', 'Cost per GB (in USD)', 'Max storage selected (in GB)', and 'ESTIMATED COST / MONTH'. At the bottom, there's a 'Save money' section with a note about Azure Hybrid Benefit, a 'vCores' slider set to 2, a 'Data max size (GB)' slider set to 32, and a note '9.6 GB LOG SPACE ALLOCATED'. A large blue 'Apply' button is at the bottom.

Step 5: Select the desired hardware configuration:

Specify:

Max vCores: 4

Max storage: 45 GB

Home > SQL databases > Create SQL Database > Configure >

SQL hardware configuration

SQL database

Available hardware configurations

Based on your workload requirements, select from available hardware configurations listed below.

Configuration	Description	Max vCores	Max memory	Max storage
Standard-series (Gen5)	Balanced memory and compute	80	415.23 GB	4 TB
M-Series	Memory optimized	--	--	--
FSV2-series	Compute optimized	--	--	--
DC-series	Enables confidential computing	--	--	--

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/service-tiers-sql-database-vcore>

Community Discussion

Objective - supports a minimum of one vCore, a maximum of four vCores This requires compute tier in Serverless option, with standard-series (Gen5).

With the suggested solution of using Provisioned compute resources are pre-allocated, billed per hour for all 4vCores constantly, but the objective asks for the flexibility. Otherwise this question would make no sense as it is obvious that with 4vCores it supports 1vCore as well (LOL)

Question #318

HOTSPOT

Case study

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes

-

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.
- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend which service and target endpoint to use when migrating the databases from SVR1 to Instance1. The solution must meet the availability requirements.

What should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Migration service:

- Log Replay Service (LRS)
- Managed Instance link
- SQL Data Sync

Target endpoint:

- A private endpoint
- A public endpoint
- A VNet-local endpoint

Explanation

Correct Answer:

Answer Area

Migration service:

Log Replay Service (LRS)

Managed Instance link

SQL Data Sync

Target endpoint:

A private endpoint

A public endpoint

A VNet-local endpoint

Community Discussion

Answer is correct: The link feature also facilitates migrating from SQL Server to SQL Managed Instance, which enables: The most performant, minimal downtime migration, compared to all other solutions available today. True online migration to SQL Managed Instance in any service tier. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/managed-instance-link-feature-overview?view=azuresql#migrate-to-azure> Only VNet-local endpoint is supported to establish a link with SQL Managed Instance. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/managed-instance-link-feature-overview?view=azuresql#limitations>

Question #319

HOTSPOT

Case study

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes

-

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.
- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a service tier and a method to offload analytical workloads for the databases migrated from SVR1. The solution must meet the availability and business requirements.

What should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Service tier:

Business Critical

General Purpose

Premium

Method:

A failover group read-only listener

Geo-replicated secondary replicas

Read scale-out

Explanation

Correct Answer:

Answer Area

Service tier:

A dropdown menu with three options: "Business Critical", "General Purpose", and "Premium". The "Premium" option is highlighted with a black border.

Method:

A dropdown menu with three options: "A failover group read-only listener", "Geo-replicated secondary replicas", and "Read scale-out". The "Read scale-out" option is highlighted with a black border.

Community Discussion

Question #320

You have an Azure subscription that contains the resources shown in the following table.

Name	Type	Description
SQLSVR1	Logical SQL server	Hosts one Azure SQL database
SQLDB11	Azure SQL database	Is hosted by SQLSVR1
SQLSVR2	Logical SQL server	Hosts two Azure SQL databases
SQLDB21	Azure SQL database	Is hosted by SQLSVR2
SQLDB22	Azure SQL database	Is hosted by SQLSVR2

You plan to use SQLDB11 as an elastic job database to run jobs on SQLDB11 and SQLDB22.

What is the minimum number of database scoped credentials required for the elastic jobs?

- A) 1
- B) 2 (Correct Answer)**
- C) 3
- D) 4

Explanation

Correct Answer: B ?

Community Discussion

Selected Answer: B

To run elastic jobs on SQLDB11 and SQLDB22 using SQLDB11 as the elastic job database, you need to create database scoped credentials for each target database. Since SQLDB11 is both the job database and a target database, and SQLDB22 is another target database, you will need a minimum of two database scoped credentials. Database Scoped Credential for SQLDB11: This credential is required to run jobs on SQLDB11. Database Scoped Credential for SQLDB22: This credential is required to run jobs on SQLDB22. When using database-scoped credentials, remember to create your jobuser user in every target

database. <https://learn.microsoft.com/en-us/azure/azure-sql/database/elastic-jobs-overview?view=azuresql>

Question #321

SIMULATION

-

You need to configure your user account as the Azure AD admin for the server named sql12345678.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Manage administrator accounts in Azure Active Directory B2C
You can assign a role when you create a user or invite a guest user. You can add a role, change the role, or remove a role for a user.

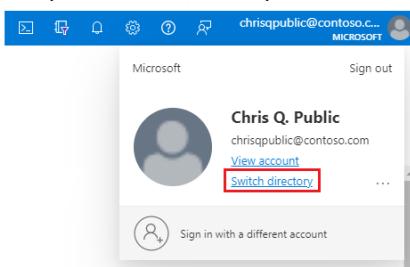
Solution 1:

Provision Microsoft Entra admin (SQL Managed Instance)

Your SQL Managed Instance needs permission to read Microsoft Entra ID to accomplish tasks such as authentication of users through security group membership or creation of new users. For this to work, you must grant the SQL Managed Instance permission to read Microsoft Entra ID. You can do this using the Azure portal or PowerShell.

To grant your SQL Managed Instance read permissions to Microsoft Entra ID using the Azure portal, sign in as a Global Administrator and follow these steps:

Step 1: In the Azure portal, in the upper-right corner select your account, and then choose Switch directories to confirm which directory is your Current directory. Switch directories, if necessary.



Step 2: Choose the correct Microsoft Entra directory as the Current directory.

This step links the subscription associated with Microsoft Entra ID to the SQL Managed Instance, ensuring the Microsoft Entra tenant and SQL Managed Instance use the same subscription.

Step 3: Now, you can choose your Microsoft Entra admin for your SQL Managed Instance. For that, go to your managed instance resource in the Azure portal and select Microsoft Entra admin under Settings.

Step 4: Select the banner on top of the Microsoft Entra admin page and grant permission to the current user.

Grant permissions

Managed Instance needs permissions to access Microsoft Entra. You need to be a "Company Administrator" or a "Global Administrator" to grant "Read" permissions to the Managed Instance.

Grant permissions

Step 5: After the operation succeeds, the following notification will show up in the top-right corner:



Step 6: On the Microsoft Entra admin page, select Set admin from the navigation bar to open the Microsoft Entra ID pane.

Step 7: On the Microsoft Entra ID pane, search for a user, check the box next to the user or group to be an administrator, and then press Select to close the pane and go back to the Microsoft Entra admin page for your managed instance. [Select yourself]

Community Discussion

It would be something like these steps: <https://docs.devolutions.net/rdm/data-sources-data-sources-types/advanced-data-sources/microsoft-azure-sql/enable-azure-active-directory-authentication/configure-admin/>

Question #322

SIMULATION

-

You need to create a new database role named role1 that can read the contents of the SalesLT.SalesOrderDetail table only in db1.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

You can create a new server role in SQL Server by using SQL Server Management Studio or Transact-SQL.

Using SQL Server Management Studio to create a new server role

Step 1: In Object Explorer, expand the server where you want to create the new server role.

Step 2: Expand the Security folder.

Step 3: Right-click the Server Roles folder and select New Server Role....

Step 4: In the New Server Role -server_role_name dialog box, on the General page, enter a name for the new server role in the Server role name box. [Enter role1]

Step 5: In the Owner box, enter the name of the server principal that will own the new role. Alternately, click the ellipsis (...) to open the Select Server Login or Role dialog box.

Step 6: Under Securables, select one or more server-level securables [Select the SalesLT.SalesOrderDetail table]. When a securable is selected, this server role can be granted or denied permissions on that securable.

Step 7: In the Permissions: Explicit box, select the check box to grant, grant with grant, or deny permission to this server role for the selected securables [Select Read]. If a permission cannot be granted or denied to all of the selected securables, the permission is represented as a partial select.

Step 8: On the Members page, use the Add button to add logins that represent individuals or groups to the new server role. [Skip]

Step 9: A user-defined server role can be a member of another server role. On the Memberships page, select a check box to make the current user-defined server role a member of a selected server role. [Skip]

Step 10: Select OK.

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/security/authentication-access/create-a-server-role>

Community Discussion

Answer is wrong. It describes creating a server role. You need to create a new database role named "role1", with select permissions on SalesLT.SalesOrderDetail in db1

Question #323

SIMULATION

-

You need to classify the StandardCost and ListPrice columns of the SalesLT.Product table in db1. The columns must have the following configurations:

- An information type of Financial
- A sensitivity label of Confidential

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

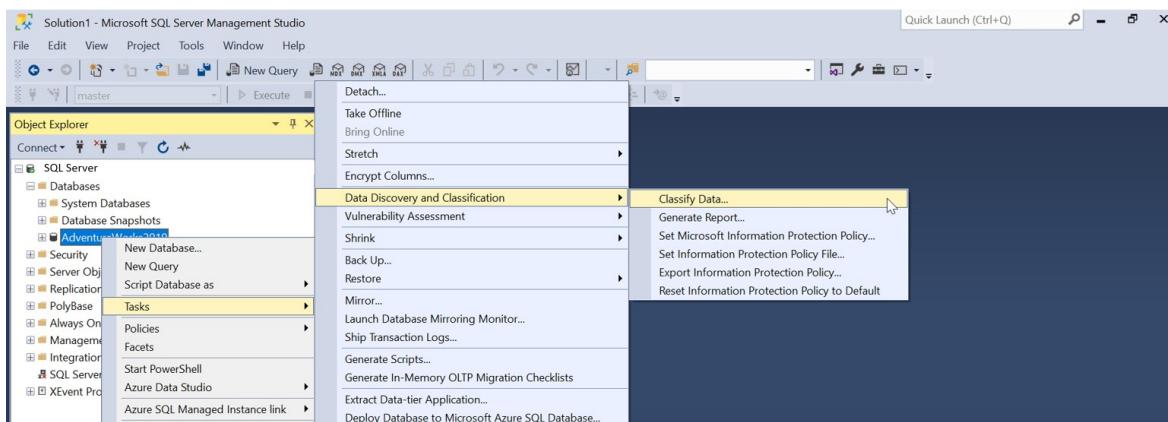
Explanation

Correct Answer:

To classify your SQL Server database:

Step 1: In SQL Server Management Studio (SSMS), connect to the SQL Server.

Step 2: In the SSMS Object Explorer, select the database [Here db1] that you would like to classify and choose Tasks > Data Discovery and Classification > Classify Data....



Step 3: The classification engine scans your database for columns containing potentially sensitive data and provides a list of recommended column classifications:

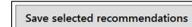
39 columns with classification recommendations (click to view)

Step 4: You can change the recommended Information Type and Sensitivity Label using the drop-down boxes.

Schema	Table	Column	Information Type
dbo	ErrorLog	UserName	Credentials
HumanResources	Employee	BirthDate	Date Of Birth
HumanResources	Employee	NationalIDNumber	National ID

Step 5: Select columns StandardCost and ListPrice. Unselect other columns if necessary. For StandardCost and ListPrice columns select information type of Financial, and sensitivity label of Confidential.

Step 6: To apply the selected recommendations, select the Save selected recommendations button.



Step 7: To display the classified columns, select appropriate schema and corresponding table from the drop-down, then select Load Columns.

We have found 25 columns with classification recommendations. Click here to view them.

Choose a table to view its classified columns:

Column	Information Type	Sensitivity Label
BirthDate	Date Of Birth	Confidential
NationalIDNumber	SSN	Confidential

Step 8: You can also manually classify columns as an alternative, or in addition, to the recommendation-based classification:

Select Add classification in the top menu of the window.



Step 9: If you want to add classification for all the unclassified columns for a specific table in a single attempt, then select All Unclassified in the Column drop down of Add Classification page.

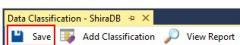
Adding classification for HumanResources.Employee

Column: All Unclassified

Information Type: Other

Sensitivity Label: Confidential

Step 10: To complete your classification and persistently label (tag) the database columns with the new classification metadata, select the Save button on the top menu of the window.



Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/security/sql-data-discovery-and-classification>

Community Discussion

Steps would be similar to this: <https://learn.microsoft.com/en-us/sql/relational-databases/security/sql-data-discovery-and-classification?view=sql-server-ver16&tabs=t-sql>

Question #324

SIMULATION

-

You need to protect all the databases on sql12345678 from SQL injection attacks.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Configure Advanced Threat Protection for Azure SQL Database

Advanced Threat Protection for Azure SQL Database detects anomalous activities indicating unusual and potentially harmful attempts to access or exploit databases. Advanced Threat Protection can identify Potential *SQL injection*, Access from unusual location or data center, Access from unfamiliar principal or potentially harmful application, and Brute force SQL credentials.

Set up Advanced Threat Protection in the Azure portal

Step 1: Sign into the Azure portal.

Step 2: Navigate to the configuration page of the server you want to protect. [Here sql12345678] In the security settings, select Microsoft Defender for Cloud.

Step 3: On the Microsoft Defender for Cloud configuration page:

Step 3a: If Microsoft Defender for SQL hasn't yet been enabled, select Enable Microsoft Defender for SQL.

Step 3b: Select Configure.

The screenshot shows the Microsoft Azure portal interface. The left sidebar has 'Security' selected under 'Microsoft Defender for Cloud'. The main content area displays the 'Microsoft Defender for SQL' configuration page. It shows a summary with 5 recommendations, 0 security alerts, and 5 findings. A prominent red box highlights the 'Microsoft Defender for SQL: Disabled (Configure)' status message. Below it is a 'Learn more' section with links to 'About Microsoft Defender for Cloud' and 'About Microsoft Defender for SQL'. At the bottom, a large blue button labeled 'Enable Microsoft Defender for SQL' is also highlighted with a red box.

Step 3c: Under ADVANCED THREAT PROTECTION SETTINGS, select Add your contact details to the subscription's email settings in Defender for Cloud.

The screenshot shows the 'Server settings' page for the 'chrisqpublictest' subscription. Under 'VULNERABILITY ASSESSMENT SETTINGS', there are sections for 'Subscription' (Contoso Team) and 'Storage account' (Select Storage account). Under 'ADVANCED THREAT PROTECTION SETTINGS', there is a note: 'Advanced Threat Protection for SQL alerts emails are sent by Defender for Cloud. Add your contact details to the subscription's email settings in Defender for Cloud.' This note is highlighted with a red box. Below it are options for 'Enable Auditing for better threats investigation experience' and a link to 'Skip'.

Step 3d: Provide the list of emails to receive notifications upon detection of anomalous database activities in the Additional email addresses (separated by commas) text box. [Skip]

Step 3e: Optionally customize the severity of alerts that will trigger notifications to be sent under Notification types. [Skip]

Step 3f: Select Save.

The screenshot shows the 'Email notifications' page. Under 'Email recipients', it says 'Select who'll get the email notifications from Defender for Cloud for the Contoso Team subscription.' A dropdown menu shows 'All users with the following roles'. Below it is a text input field for 'Additional email addresses (separated by commas)', which contains 'One or more email addresses separated by commas'. At the bottom, there is a section for 'Notification types' with a note: 'Use the settings below to select the type of email notifications to be sent by Defender for Cloud.' A checkbox for 'Notify about alerts with the following severity (or higher):' is checked, with 'High' selected.

Community Discussion

Question #325

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a process to automate the management of DB3. The solution must meet the management requirements.

What should be the first step of the process?

- A) Configure Microsoft Entra authentication for the logical server that hosts DB3.
- B) Configure a private endpoint for connectivity to DB3.
- C) Create database-scoped credentials in DB3. (Correct Answer)**
- D) Create a database that has database-scoped credentials.

Explanation

Correct Answer: C ?

Community Discussion

Selected Answer: C

<https://learn.microsoft.com/en-us/azure/azure-sql/database/elastic-jobs-overview?view=azuresql> When using database-scoped credentials, remember to create your jobuser user in every target database.

Question #326

DRAG DROP**Case study**

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes

-

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.
- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend an authentication solution for App1 access to DB1 and DB2 after their migration to Instance1. The solution must meet the availability requirements.

Which actions should you perform in sequence? To answer, drag the appropriate actions to the correct order. Each action 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.

NOTE: Each correct selection is worth one point.

Steps	Answer Area
Enable a system-assigned managed identity.	Step 1: Enable Microsoft Entra authentication on Instance1.
Enable a system-assigned service principal.	Step 2:
Grant admin consent to an app registration in Microsoft Entra.	Step 3:
Implement Microsoft Entra Cloud Sync.	

Explanation

Correct Answer:	Answer Area
	Step 1: Enable Microsoft Entra authentication on Instance1.
	Step 2: Implement Microsoft Entra Cloud Sync.
	Step 3: Enable a system-assigned service principal.

Community Discussion

I don't agree with the last step suggested - System-Assigned Service Principal. A system-assigned service principal is useful for scenarios where you need to grant specific Azure resources access to other resources. Enabling a system-assigned service principal can indeed be a good option for managing access and authentication in Azure. However, in the context of your scenario, where App1 needs to maintain access to DB1 and DB2 after

their migration to Azure Managed Instance (Instance1), using Microsoft Entra authentication and granting admin consent to an app registration is more aligned with the requirements for seamless integration and security. So the last step is to reuse App1 registration.

----- 1.
Enable Microsoft Entra ID authentication on Instance1 2. Implement Microsoft Entra ID Cloud Sync 3. Grant admin consent to an app registration (for App1) in Microsoft Entra ID From the case study: App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication - for this to happen, there is already Entra ID app registration for App1.

Question #327

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a solution that will enable remote developers to access DB1 and DB2. The solution must support the planned changes and meet the security requirements.

What should you include in the recommendation?

- A) a public endpoint via a database-level firewall rule
- B) a Point-to-Site (P2S) VPN
- C) a public endpoint via a server-level firewall rule
- D) a private endpoint (Correct Answer)**

Explanation

Correct Answer: D ?

Community Discussion

Selected Answer: D

I'd say D because of following: There are three options to connect to a SQL Managed Instance in a different virtual network: Private endpoints Azure VNet peering VNet-to-VNet VPN gateway (Azure portal, PowerShell, Azure CLI) Of the three, private endpoints are the most secure and resource-economical option because they: only expose the SQL Managed Instance from its virtual network. only allow one-way connectivity. require just one IP address in the application's virtual network. <https://learn.microsoft.com/en-us/azure/azure-sql/managed-instance/connect-application-instance?view=azuresql#connect-from-inside-a-different-vnet>

Question #328

You have five instances of SQL Server on Azure Virtual Machines.

You need to monitor Microsoft SQL Server performance for all the instances by consolidating metrics into a single graphic display. The solution must minimize administrative effort.

What should you use?

- A) Azure Monitor
- B) Log Analytics (Correct Answer)**
- C) SQL Insights
- D) Azure SQL Analytics

Explanation

Correct Answer: B ?

Community Discussion

Selected Answer: A

To monitor the performance of your five SQL Server instances on Azure Virtual Machines and consolidate metrics into a single graphic display while minimizing administrative effort, you should use: A. Azure Monitor <https://learn.microsoft.com/en-us/azure/azure-monitor/overview>

Question #329

You have an instance of SQL Server on Azure Virtual Machines named SQL1.

SQL1 contains an Extended Events session named session1 that captures Microsoft SQL Server events.

You need to correlate the session events with events captured by Event Tracing for Windows (ETW).

What should you do for session1?

- A) Modify the Set Session Event Filters settings.
- B) Add a target. (Correct Answer)**
- C) Add an action.
- D) Modify the Specify Session Data Storage settings.

Explanation

Correct Answer: B [?](#)

Community Discussion

Selected Answer: B

The answer is B https://learn.microsoft.com/en-us/sql/relational-databases/extended-events/targets-for-extended-events-in-sql-server?view=sql-server-ver16#etw_classic_sync_target-target <https://learn.microsoft.com/en-us/sql/relational-databases/extended-events/event-tracing-for-windows-target?view=sql-server-ver16>

Selected Answer: B

Answer B seems correct.

Question #330

You have an Azure subscription that contains the following resources:

- 10 Azure SQL databases
- Five Azure SQL managed instances
- Five instances of SQL Server on Azure Virtual Machines

You need to implement a centralized monitoring solution for all the Azure SQL resources. The solution must minimize administrative effort.

What should you include in the solution?

- A) Log Analytics
- B) Azure SQL Analytics
- C) Query Performance Insight
- D) SQL Insights (Correct Answer)**

Explanation

Correct Answer: D [?](#)

Community Discussion

Selected Answer: D

Answer is D. SQL Insights is the only option that monitors SQL Server on Azure VM, Azure SQL Database and Azure SQL Managed Instance. <https://learn.microsoft.com/en-us/azure/azure-sql/database/sql-insights-overview?view=azuresql>

Question #331

SIMULATION

You need to ensure that all queries executed against db1 are captured in the Query Store.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Azure "Query Store" capture queries
Monitor performance by using the Query Store
Enable the Query Store
Query Store is enabled by default for new Azure SQL Database and Azure SQL Managed Instance databases.

Use the Query Store page in SQL Server Management Studio

Step 1: In Object Explorer, right-click a database, and then select Properties.

Note

Requires at least version 16 of Management Studio.

Step 2: In the Database Properties dialog box, select the Query Store page.

Step 3: In the Operation Mode (Requested) box, select Read Write.

Note: The Query Store feature provides you with insight on query plan choice and performance for SQL Server, Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics. The Query Store simplifies performance troubleshooting by helping you quickly find performance differences caused by query plan changes. Query Store automatically captures a history of queries, plans, and runtime statistics, and retains these for your review. It separates data by time windows so you can see database usage patterns and understand when query plan changes happened on the server.

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/performance/monitoring-performance-by-using-the-query-store>

Community Discussion

Question #332

SIMULATION

-

You need to enable change data capture (CDC) for db1.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Note: Before you can create a capture instance for individual tables, you must enable change data capture for the database.

To enable change data capture, run the stored procedure sys.sp_cdc_enable_db (Transact-SQL) in the database context.

Stored procedure execution

You can use the SQL Server Management Studio (SSMS) user interface or Transact-SQL in an SSMS query window to execute a stored procedure. Always use the latest version of SSMS.

Use SQL Server Management Studio

Step 1: In Object Explorer, connect to an instance of SQL Server or Azure SQL Database, expand that instance, and then expand Databases.

Step 2: Expand the database that you want, expand Programmability, and then expand Stored Procedures.

Step 3: Right-click the stored procedure that you want to run [here: sys.sp_cdc_enable_db] and select Execute Stored Procedure.

Step 4: Select OK to execute the stored procedure. If the stored procedure doesn't have any parameters, just select OK.

Note: Enable Database for CDC in Transact-SQL

```
-- ====
-- Enable Database for CDC
-- ====
USE MyDB
GO
EXEC sys.sp_cdc_enable_db
GO
```

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/track-changes/enable-and-disable-change-data-capture-sql-server>
<https://learn.microsoft.com/en-us/sql/relational-databases/stored-procedures/execute-a-stored-procedure>

Community Discussion

Question #333

SIMULATION

-

In an Azure SQL database named db1, you need to enable page compression on the PK_SalesOrderHeader_SalesOrderID clustered index of the SalesLT.SalesOrderHeader table.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Enable compression on a table or index
Use SQL Server Management Studio

Step 1: In Object Explorer, expand the database that contains the table that you want to compress and then expand the Tables folder.

Step 2: To compress an index, expand the table [Here: SalesLT.SalesOrderHeader table], that contains the index that you want to compress and then expand the Indexes folder.

Step 3: In the Data Compression Wizard, on the Welcome to the Data Compression Wizard page, select Next.

Step 4: On the Select Compression Type page, select the compression type [Here: page compression] to apply to each partition in the table or index you want to compress. When finished, select Next.

Step 4a: Compression Type

Select the compression option for each partition. Isn't available when Use the same compression type for all partitions is selected. List options are None, Row, and Page[This one].

Step 4b: Skip the other options

Step 5: Right-click the table or index [Here: PK_SalesOrderHeader_SalesOrderID] to compress, point to Storage and select Manage Compression....

Step 6: In the Select an Output Option page, specify how you want to complete your compression. Select Create Script to create a SQL script based the previous pages in the wizard. Select Run immediately to create the new partitioned table after completing all remaining pages in the wizard.

Step 7: On the Review Summary page, under Review your selections, expand all available options to verify that all compression settings are correct. If everything is as expected, select Finish.

(On the Compression Wizard Progress page, monitor status information about the actions of the Create Partition Wizard. Depending on the options that you selected in the wizard, the progress page might contain one or more actions. The top box displays the overall status of the wizard and the number of status, error, and warning messages that the wizard has received.)

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/data-compression/enable-compression-on-a-table-or-index?>

Community Discussion

Question #334

SIMULATION

-

You need to rebuild the index for PK_Address_AddressID in the SalesLT.Address table in db1. The solution must meet the following requirements:

- Ensure that 30 percent of the index page is reserved for future updates and inserts.
- Minimize page splits.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Note: The easiest way to fix page splits is to set a fill factor value (for instance, 90) when the offending index is rebuilt. If a fill factor is not set, SQL Server uses the server-level default, which is 100 (this default can be changed, however).

Reorganize or rebuild an index in SQL Server Management Studio

Step 1: In Object Explorer, Expand the database [Here db1] that contains the table on which you want to reorganize an index.

Step 2: Expand the Tables folder.

Step 3: Expand the table [Here: SalesLT.Address] on which you want to reorganize an index.

Step 4: Expand the Indexes folder.

Step 5: Right-click the index [Here for PK_Address_AddressID] with the fill factor that you want to specify and select Properties.

5a) Under Select a page, select Options.

5b) In the Fill factor row, enter the fill factor that you want. [Here: 70%]

Question: Ensure that 30 percent of the index page is reserved for future updates and inserts.

5c) Click OK.

Step 6: Right-click the index you want to reorganize [Here for PK_Address_AddressID] and select Reorganize.

Step 7: In the Reorganize Indexes dialog box, verify that the correct index is in the Indexes to be reorganized grid and click OK.

Step 8: Select the Compact large object column data check box to specify that all pages that contain large object (LOB) data are also compacted.

Step 9: Click OK.

Reference:

<https://www.beyondtrust.com/docs/privileged-identity/faqs/reorganize-and-rebuild-indexes-in-database.htm>

<https://learn.microsoft.com/en-us/sql/relational-databases/indexes/specify-fill-factor-for-an-index>

Community Discussion

Question #335

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a solution to meet the security requirements and the business requirements for DB3.

What should you recommend as the first step of the solution?

- A) Run the sp_addarticle stored procedure.
- B) Run the ALTER TABLE statement and specify the ENABLE CHANGE_TRACKING Clause.
- C) Run the ALTER DATABASE statement and specify the SET CHANGE_TRACKING = ON Clause.
(Correct Answer)**
- D) Run the sys.sp_cdc_enable_db stored procedure.

Explanation

Correct Answer: C ?

Community Discussion

Selected Answer: D

The answer is D. Before you can create a capture instance for individual tables, you must enable CDC for your Azure SQL Database. To enable CDC, connect to your Azure SQL Database through Azure Data Studio or SQL Server Management Studio (SSMS). Open a new query window, then enable CDC by running the following T-SQL: EXEC sys.sp_cdc_enable_db; GO <https://learn.microsoft.com/en-us/azure/azure-sql/database/change-data-capture-overview?view=azuresql#enable-cdc-for-azure-sql-database>

I think it's actually D

Selected Answer: D

Wrong answer provided - Change tracking does not capture detailed information about the changes, such as the values before and after the change, and it does not track changes within individual transactions. Run the sys.sp_cdc_enable_db Stored Procedure This stored procedure enables Change Data Capture (CDC) for the database. CDC captures detailed information about changes, including the values before and after the change, and records them in change tables. It's ideal for auditing and tracking all changes, including those within individual transactions. CDC provides comprehensive change tracking, making it suitable for scenarios where detailed auditing is required.

Question #336

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a solution to ensure that the performance of DB3 is optimized after the migration to Azure SQL Database. The solution must meet availability requirements.

What should you include in the recommendation?

A) vertical scaling (Correct Answer)

- B) a custom resource pool
- C) Resource Governor
- D) horizontal scaling

Explanation

Correct Answer: A ?

Community Discussion

Selected Answer: B

While vertical scaling can improve performance, it doesn't address resource contention between App2 and App3. It also doesn't provide the granularity needed to manage resource allocation for different workloads. Additionally, vertical scaling alone doesn't ensure high availability or disaster recovery.

Resource Governor is not available in Azure SQL Database. It's a feature specific to SQL Server on-premises and SQL Server on Azure VMs or Azure Managed Instance. Therefore, it cannot be used to manage resources in Azure SQL Database.

Azure SQL Database supports horizontal scaling through elastic pools, but this approach is more complex and may not directly address the specific performance issues caused by resource demand changes from App2 and App3. It also requires significant changes to the application architecture and database design.

Custom resource pool here =

Elastic Pool - ANSWER B

Question #337

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to identify the event_file target for monitoring DB3 after the migration to Azure SQL Database. The solution must meet the management requirements.

What should you use as the event_file target?

- A) a SQL Server filegroup
- B) an Azure SQL database
- C) an Azure Files share
- D) an Azure Blob Storage container (Correct Answer)**

Explanation

Correct Answer: D ?

Community Discussion

Selected Answer: D

D. an Azure Blob Storage container

Selected Answer: D

Azure Blob Storage Container: This option allows you to store the event_file target in a scalable and durable storage solution. Azure Blob Storage is designed for storing large amounts of unstructured data, such as logs and event files, making it an ideal choice for Extended Events sessions.

Question #338

You manage 100 Azure SQL managed instances located across 10 Azure regions.

You need to receive voice message notifications when a maintenance event affects any of the 10 regions. The solution must minimize administrative effort.

What should you do?

A) From the Azure portal, create a service health alert. (Correct Answer)

- B) From the Azure portal, create an Azure Advisor operational excellence alert.
- C) From the Azure portal, configure an activity log alert.
- D) From Microsoft SQL Server Management Studio (SSMS), configure a SQL Server agent job.

Explanation

Correct Answer: A ?

Community Discussion

Selected Answer: A

Service Health is correct. <https://www.mssqltips.com/sqlservertip/5751/configure-service-health-alerts-using-azure-service-health-part-2/>

Selected Answer: A

Question #339

HOTSPOT

You plan to deploy three instances of SQL Server on Azure Virtual Machines that will each contain 20 databases.

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

- Ensures that the deployment is highly available
- Minimizes administrative effort to manage users, logins, permissions, and SQL Server Agent jobs across the instances

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Type of availability group:

Always On
Contained
Distributed

Minimum Microsoft SQL Server version:

2017
2019
2022

Explanation

Correct Answer:

Answer Area

Type of availability group:

A screenshot of a dropdown menu with three options: 'Always On', 'Contained', and 'Distributed'. The 'Always On' option is highlighted with a black rectangle.

Minimum Microsoft SQL Server version:

A screenshot of a dropdown menu with three options: '2017', '2019', and '2022'. The '2019' option is highlighted with a black rectangle.

Community Discussion

The minimum SQL version for SQL on Azure VM is 2016 that supports Availability Groups.
Therefore the answer should be "Always On" and "2017"

Always On, SQL Server 2017

Question #340

You have two Azure virtual machines named Server1 and Server2 that run Windows Server 2022 and are joined to an Active Directory Domain Services (AD DS) domain named contoso.com.

Both virtual machines have a default instance of Microsoft SQL Server 2019 installed. Server1 is configured as a master server, and Server2 is configured as a target server.

On Server1, you create a proxy account named contoso\sqlproxy.

You need to ensure that the SQL Server Agent job steps can be downloaded from Server1 and run on Server2.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A) On Server2, grant the contoso\sqlproxy account the Impersonate a client after authentication user right.
- B) On Server2, grant the contoso\sqlproxy account the Access this computer from the network user right.

C) On Server2, create a proxy account. (Correct Answer)

D) On Server1, set the AllowDownloadedJobsToMatchProxyName registry entry to 1.

E) On Server2, set the AllowDownloadedJobsToMatchProxyName registry entry to 1. (Correct Answer)

Explanation

Correct Answer: CE [?](#)

Community Discussion

Selected Answer: AB

Correct Actions A. Grant the contoso\sqlproxy account the Impersonate a client after authentication user right on Server2: This user right allows the proxy account to impersonate a client after authentication, which is necessary for running job steps under the proxy account's context. B. Grant the contoso\sqlproxy account the Access this computer from the network user right on Server2: This user right allows the proxy account to access Server2 from the network, enabling it to download and execute job steps from Server1. By granting these user rights, you ensure that the contoso\sqlproxy account can effectively download and run SQL Server Agent job steps on Server2, meeting the requirements for your setup.

Question #341

You have an Azure subscription. The subscription contains an instance of SQL Server on Azure Virtual Machines named SQL1 and an Azure Automation account named account1.

You need to configure account1 to restart the SQL Server Agent service if the service stops.

Which setting should you configure?

- A) Start/Stop VM
- B) Change tracking
- C) Update management
- D) State configuration (DSC) (Correct Answer)**

Explanation

Correct Answer: D [?](#)

Community Discussion

Selected Answer: D

Use DSC to restart services.

Selected Answer: D

```
Configuration EnsureSqlAgentRunning { Node "SQL1" { Service "SQLAgentService" { Name = "SQLSERVERAGENT" State = "Running" } } } EnsureSqlAgentRunning
```

Question #342

SIMULATION

-

You need to ensure that any unused indexes of the databases on sql12345678 are removed automatically.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

You can go to Azure portal, and enable Azure SQL Database to automatically create or drop indexes:

Step 1: To enable automatic tuning on a server in Azure SQL Database, navigate to the server in the Azure portal. [Here navigate to sql12345678]

Step 2: Select Automatic tuning in the menu.

OPTION	DESIRED STATE	CURRENT STATE
FORCE PLAN	ON OFF INHERIT	OFF Forced by user
CREATE INDEX	ON OFF INHERIT	OFF Forced by user
DROP INDEX	ON OFF INHERIT	OFF Forced by user

Step 3: Change the setting for "Drop Index" to On.

Select ON to allow recommendations to be executed automatically:

Create index	ON OFF
Drop index	ON OFF

i Drop index recommendations are currently in preview [Learn more](#)

Reference:

<https://techcommunity.microsoft.com/t5/azure-sql-blog/automatic-index-management-in-azure-sql-database/ba-p/386140>

<https://learn.microsoft.com/en-us/azure/azure-sql/database/automatic-tuning-enable>

Question #343

SIMULATION

-

You need to generate an email alert to [\[email protected\]](mailto:) when CPU percentage utilization for db1 is higher than average.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Create a CPU status alert for a SQL Server on Azure

Create a metric alert with dynamic thresholds (Create an alert when a CPU exceeds an average)

Step 1: In the search bar at the top of the Azure portal, type SQL, and select SQL databases. Select the AdventureWorksLT database name listed.[Here db1]

Home >

The screenshot shows the 'SQL databases' blade in the Azure portal. A single database, 'AdventureWorksLT', is listed under the 'Subscription == all' filter. The database details shown are: General Purpose: Gen5, 2 vCores, South Central US, and GTL DEV CSR 1.

Step 2: On the main blade for the database, navigate down to the monitoring section. Select Alerts.

The screenshot shows the 'AdventureWorksLT' database blade. The 'Monitoring' section is expanded, and the 'Alerts' option is highlighted with a red box. Other options in the list include Metrics, Diagnostic settings, and Logs. To the right, detailed information about the database is displayed, such as Resource group (move), Status (Online), Location (South Central US), Subscription (move), and Pricing tier (General Purpose: Gen5, 2 vCores).

Step 3: Select Create alert rule.

The screenshot shows the 'Create alert rule' blade. It has a heading 'Set up alert rules on this resource' and a note 'Get notified when important monitoring events happen on your resource.' Below is a large green speech bubble icon with an exclamation mark. A blue button labeled 'Create alert rule' is highlighted with a red box.

Step 4: In the Select a signal slide out, select CPU percentage.

The screenshot shows the 'Select a signal' blade. It asks to choose a signal type (All) and monitor service (All). A list of 35 signals is shown, with 'CPU percentage' highlighted with a red box. The table columns are Signal name, Signal type, and Monitor service.

Signal name	Signal type	Monitor service
Data space allocated	Metrics	Platform
Blocked by Firewall	Metrics	Platform
Failed Connections	Metrics	Platform
Successful Connections	Metrics	Platform
CPU limit	Metrics	Platform
CPU percentage	Metrics	Platform
CPU used	Metrics	Platform
Deadlocks	Metrics	Platform

Step 5: In the Configure signal logic slide out, select Dynamic for the Threshold property

Configure signal logic

Community Discussion

Question #344

HOTSPOT

-

You plan to deploy an Always On failover cluster instance (FCI) on Azure virtual machines.

You need to provision an Azure Storage account to host a cloud witness for the deployment.

How should you configure the storage account? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Type:

- Premium block blobs
- Premium file shares
- Standard general-purpose v2

Replication:

- Geo-redundant storage (GRS)
- Locally-redundant storage (LRS)
- Read-access geo-redundant storage (RA-GRS)

Explanation

Correct Answer:

Answer Area

Type:

- Premium block blobs
- Premium file shares
- Standard general-purpose v2**

Replication:

- Geo-redundant storage (GRS)**
- Locally-redundant storage (LRS)**
- Read-access geo-redundant storage (RA-GRS)

Community Discussion

Standard general-purpose v2 and LRS is correct according to ChatGPT

I think second option should be GRS

Question #345

DRAG DROP

You have an Azure virtual machine named Server1 that contains an instance of Microsoft SQL Server 2022 named SQL1.

SQL1 contains two databases named DB1 and DB2.

You need to take a snapshot backup of DB1 and DB2. The backup must NOT disrupt the backup chain and must NOT affect other databases.

Which three Transact-SQL commands should you run in sequence? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order.

Commands

```
BACKUP GROUP db1, db2  
TO DISK = 'd:\temp\db.bkm'  
WITH METADATA_ONLY, FORMAT;
```

```
BACKUP SERVER  
TO DISK = 'd:\temp\db.bkm'  
WITH METADATA_ONLY, FORMAT;
```

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON  
(GROUP = (db1, db2), MODE = COPY_ONLY);
```

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON  
(GROUP = (db1, db2));
```

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = OFF
```

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON;
```

Answer Area



Explanation

Answer Area

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON  
(GROUP = (db1, db2));
```

```
BACKUP GROUP db1, db2  
TO DISK = 'd:\temp\db.bkm'  
WITH METADATA_ONLY, FORMAT;
```

```
ALTER SERVER CONFIGURATION  
SET SUSPEND_FOR_SNAPSHOT_BACKUP = OFF
```

Correct Answer:

Community Discussion

```
ALTER SERVER CONFIGURATION SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON (GROUP =  
(testdb1, testdb2)); BACKUP GROUP testdb1, testdb2 TO DISK = 'D:\Temp\db.bkm' WITH  
METADATA_ONLY, FORMAT; https://learn.microsoft.com/en-us/sql/relational-databases/backup-restore/create-a-transact-sql-snapshot-backup?view=sql-server-ver16
```

Question #346

SIMULATION

You need to configure a disaster recovery solution for db1. When a failover occurs, the connection strings to the database must remain the same. The secondary server must be in the West US 3 Azure region.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Configure active geo-replication and failover (Azure SQL Database)

You can configure active geo-replication for Azure SQL Database using the Azure portal or Azure CLI and to initiate failover.

Add a secondary database

The following steps create a new secondary database in a geo-replication partnership.

Step 1: In the Azure portal, browse to the database [Here db1] that you want to set up for geo-replication.

Step 2: On the SQL Database page, select your database [Here db1], scroll to Data management, select Replicas, and then select Create replica.

A screenshot of the Azure portal showing the 'Replicas' section for the 'guestlist' database. The 'Replicas' tab is selected. At the top right, there is a red box around the '+ Create replica' button. Below it, there is a table with columns 'Name', 'Server', and 'Region'. The table shows 'No replicas found'.

Step 3: Select or create [Here create] the server for the secondary database, and configure the Compute + storage options if necessary. You can select any region for your secondary server, but we recommend the paired region.

For region select: West US 3

Create SQL Database - Geo Replica

Microsoft

Primary database details

Additional settings will be defaulted where possible based on the primary database.

Primary database

guestlist

Region

eastus

Database details

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources

Database name

guestlist

Server * ⓘ

contosowest (West US)

[Create new](#)

Region

West US

Want to use SQL elastic pool? * ⓘ

Yes No

Compute + storage * ⓘ

General Purpose

Standard-series (Gen5), 2 vCores, 32 GB storage, zone redundant disabled

[Configure database](#)

Step 4: Click Review + create, review the information, and then click Create.

The secondary database is created and the deployment process begins.

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-configure-portal>

Community Discussion

Question #347

SIMULATION

-

You need to configure high availability for db1. The solution must tolerate the loss of an Azure datacenter without data loss or the need to modify application connection strings.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Configure a license-free standby replica (preview) for Azure SQL Database

You can save on licensing costs by designating your secondary disaster recovery (DR) database for standby when using Azure SQL Database.

Configure a standby replica

You can designate a replica for standby when you configure a new active geo-replication relationship by using the Azure portal, PowerShell, or the Azure CLI.

To create a new active geo-replication relationship and designate your secondary database for standby in the Azure portal, follow these steps:

Step 1: Go to your SQL database [Here db1] resource in the Azure portal.

Step 2: Choose Replicas under Data management from the resource menu, and then select + Create replica to open the Create SQL Database - Geo Replica page.

[Home](#) > [SQL databases](#) > [MySampleDatabase \(mydocsamplesqlserver/MySampleDatabase\)](#)

The screenshot shows the Azure portal interface for managing a SQL database named 'MySampleDatabase'. In the top navigation bar, there are links for 'Search', 'Create replica' (which is highlighted with a red box), 'Refresh', and 'Feedback'. On the left, a sidebar titled 'Data management' has a 'Replicas' link (also highlighted with a red box). Below the sidebar, there's a message: 'Geo replicas for your database are listed below. Get started' with a 'Learn more' link. At the bottom of the sidebar, there's a 'Sync to other databases' link.

Step 3: On the Create SQL Database - Geo Replica page, select Standby replica for Replica type under Replica configuration. Check the box to confirm you'll use the replica for standby.

[Home](#) > [SQL databases](#) > [MySampleDatabase \(mydocsamplesqlserver/MySampleDatabase\) | Replicas](#) >

Create SQL Database - Geo Replica

Microsoft

[Basics](#) [Review + create](#)

Replica configuration

Choose a replica type. Geo and standby replicas both offer independent compute + storage and security configuration from the primary, as well as an accessible endpoint. [Learn more](#)

Replica type *

- Geo replica - Resides on a different logical server from the primary, protects against prolonged region outages.
- Standby replica - Resides on a different logical server from the primary. Allows for disaster recovery in anticipation of a failover event. Cannot serve read queries. Does not incur additional licensing cost.

I confirm that I will use the secondary replica as a standby replica. *

Step 4: Provide a new or existing server for the new standby database and then use Review + create to do a final validation of your database and server details.

Step 5: Use Create to confirm your settings and create your new standby database replica.

Reference:

<https://learn.microsoft.com/en-us/azure/azure-sql/database/standby-replica-how-to-configure>

Community Discussion

To configure high availability for DB1 in a way that tolerates the loss of an Azure datacenter without data loss and without needing to modify application connection strings, you should use Failover Groups rather than a standby replica.

Question #348

SIMULATION

You need to configure a monthly backup of db2. The monthly backups must be retained for five years, and then deleted.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

Change automated backup settings for Azure SQL Database
You can modify automated backup settings for Azure SQL Database, such as the short-term retention policy and the backup storage redundancy option that's used for backups.

To change differential backup frequency, select 12 Hours or 24 hours from the drop-down menu under Differential backup frequency.

Step 1: Go to the logical server in Azure with the databases whose retention period you want to change.

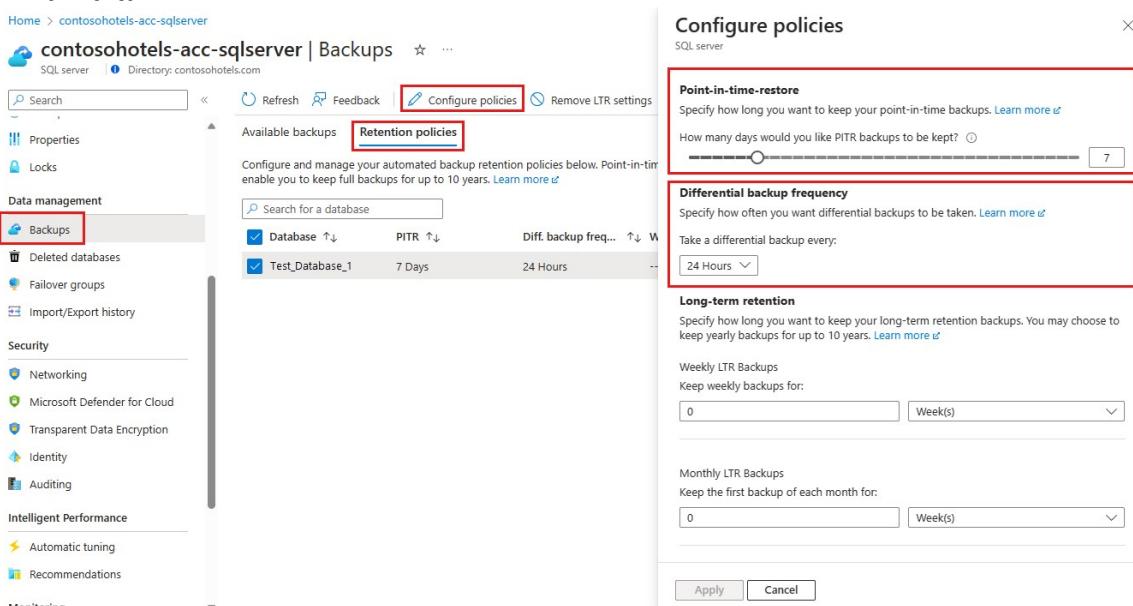
Step 2: Select Backups on the left pane, and then select the Retention policies tab.

Step 3: Select the databases for which you want to change the PITR backup retention. [Select db2]

Step 4: Select Configure policies from the action bar.

Step 5: To change the retention period for point-in-time restore backups, use the slider under Point-in-time restore. [Skip]

Step 6: To change the PITR (point-in-time recovery) backup retention period or the differential backup frequency for active databases by using the Azure portal: [Skip]



Step 7: In Long-term retention, Monthly LTR Bakups, Set Keep the first backup of each month for: 5 Years

Question: The monthly backups must be retained for five years, and then deleted.

Reference:
<https://learn.microsoft.com/en-us/azure/azure-sql/database/automated-backups-change-settings>

Community Discussion

Question #349

SIMULATION

-

You need to provide a user named user2-12345678 with the ability to back up and restore databases and change the compute setting of the databases located on a server named sql12345678. User2-12345678 must be prevented from connecting to the databases and modifying database server settings. The solution must minimize administrative effort.

To complete this task, sign in to the virtual machine. You may need to use SQL Server Management Studio and the Azure portal.

Explanation

Correct Answer:

You can assign roles to logins and database users in SQL Server by using SQL Server Management Studio or Transact-SQL. Use roles in SQL Server to efficiently manage permissions. Assign permissions to roles, and then add and remove users and logins to the roles. By using roles, permissions do not have to be individually maintained for each user.

To add a member to a user-defined database role

Step 1: In Object Explorer, expand the server [Here sql12345678] in which you want to edit a user-defined database role. Expand the Security folder.

Step 2: Expand the Databases folder.

Step 3: Expand the database in which you want to edit a user-defined database role. [Select all the databases]

Step 4: Expand the Security folder.

Step 5: Expand the Roles folder.

Step 6: Expand the Database Roles folder.

Step 7: Right-click the role you want to edit and select Properties.

Step 8: In the Database Role Properties -database_role_name dialog box, in the General page, click Add.

Step 9: In the Select Database User or Role dialog box, under Enter the object names to select (examples), enter the login or database role to add to this database role [Select db_backupoperator]. Alternately, click Browse... and select any or all of the available objects in the Browse for Objects dialog box. Click OK to return to the Database Role Properties -database_role_name dialog box.

Note: Fixed-database roles

The following table shows the fixed-database roles and their capabilities. These roles exist in all databases.

* db_backupoperator

Members of the db_backupoperator fixed database role can back up the database.

* Etc.

Step 10: Select OK.

Reference:

<https://learn.microsoft.com/en-us/sql/relational-databases/security/authentication-access/join-a-role>

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

Community Discussion

Provided solution is wrong! ----- Here is the solution:

Objective 1 - provide user2-12345678 ability to back up and restore databases; Objective 2 - provide user2-12345678 ability to and change the compute setting of the databases located on a server named sql12345678. Objective 3 - User2-12345678 must be prevented from connecting to the databases Objective 4 - User2-12345678 must be prevented from modifying database server settings. Objective 5 - The solution must minimize administrative effort.

----- In Azure, go to SQL Server and configure Access Control (IAM). Add new role assignment > SQL DB Contributor > Try - Query Editor - Login failed for user - Objective 3 OK Try - SSMS - Connect to server - export database / import database - Objective 1 OK Try - db

Compute + storage - changes - Objective 2 Try - to modify SQL server settings - fails on various settings tried - Objective 4 OK Minimal effort to configure - add user to built-in role - Objective 5 OK

Question #350

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend a backup solution to restore DB3. The solution must meet the availability requirements.

Which type of backup should you use?

A) differential (Correct Answer)

- B) transaction log
- C) long-term retention (LTR)
- D) point-in-time restore (PITR)

Explanation

Correct Answer: A ?

Community Discussion

Selected Answer: C

Answer is LTR. You can use the following methods to restore a database to another server: Long-term backup restore Geo-restore Database copy Active geo-replication
<https://learn.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups?view=azuresql&tabs=azure-portal#restore-database-to-another-server> If you delete a server, all of its databases and their PITR backups are also deleted. You can't restore a deleted server, and you can't restore the deleted databases from PITR backups. If you had configured LTR backups for those databases, you can use those backups to restore the databases to a different server. <https://learn.microsoft.com/en-us/azure/azure-sql/database/recovery-using-backups?view=azuresql&tabs=azure-portal#restore-deleted-database>

Question #351

Case study -

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study -

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview -

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes -

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.

- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You need to recommend which configuration to perform twice to enable access to the primary and secondary replicas of DB3. The solution must meet the availability requirements.

What should you recommend?

- A) Enable database firewall rules.
- B) Create database-scoped credentials.
- C) Configure connection strings that reference the read-write listener. (Correct Answer)**
- D) Configure virtual network service endpoints.

Explanation

Correct Answer: C ?

Community Discussion

Selected Answer: C

Configure connection strings that reference the read-write listener. This configuration ensures that applications can seamlessly connect to the primary replica of DB3, maintaining accessibility following a planned failover.

Question #352

HOTSPOT

Case study

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

ADatum Corporation is a financial services company that has a main office in New York City.

Existing Environment. Licensing Agreement

ADatum has a Microsoft Volume Licensing agreement that includes Software Assurance.

Existing Environment. Network Infrastructure

ADatum has an on-premises datacenter and an Azure subscription named Sub1.

Sub1 contains a virtual network named Network1 in the East US Azure region.

The datacenter is connected to Network1 by using a Site-to-Site (S2S) VPN.

Existing Environment. Identity Environment

The on-premises network contains an Active Directory Domain Services (AD DS) forest.

The forest contains a single domain named corp.adatum.com.

The corp.adatum.com domain syncs with a Microsoft Entra tenant named adatum.com.

Existing Environment. Database Environment

The datacenter contains the servers shown in the following table.

Name	Operating system	Description
SVR1	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR2	Windows Server 2016	Has Microsoft SQL Server 2016 Enterprise installed. Has an Always On availability group named AG1 that contains two databases named DB1 and DB2.
SVR3	Windows Server 2019	Has Microsoft SQL Server 2019 Enterprise installed that contains a database named DB3.

DB1 and DB2 are used for transactional and analytical workloads by an application named App1.

App1 runs on Microsoft Entra hybrid joined servers that run Windows Server 2022. App1 uses Kerberos authentication.

DB3 stores compliance data used by two applications named App2 and App3.

DB3 performance is monitored by using Extended Events sessions, with the event_file target set to a file share on a local disk of SVR3.

Resource allocation for DB3 is managed by using Resource Governor.

Requirements. Planned Changes

-

ADatum plans to implement the following changes:

- Deploy an Azure SQL managed instance named Instance1 to Network1.
- Migrate DB1 and DB2 to Instance1.
- Migrate DB3 to Azure SQL Database.
- Following the migration of DB1 and DB2, hand over database development to remote developers who use Microsoft Entra joined Windows 11 devices.
- Following the migration of DB3, configure the database to be part of an auto-failover group.

Requirements. Availability Requirements

ADatum identifies the following post-migration availability requirements:

- For DB1 and DB2, offload analytical workloads to a read-only database replica in the same Azure region.
- Ensure that if a regional disaster occurs, DB1 and DB2 can be recovered from backups.
- After the migration, App1 must maintain access to DB1 and DB2.
- For DB3, manage potential performance issues caused by resource demand changes by App2 and App3.
- Ensure that DB3 will still be accessible following a planned failover.
- Ensure that DB3 can be restored if the logical server is deleted.
- Minimize downtime during the migration of DB1 and DB2.

Requirements. Security Requirements

ADatum identifies the following security requirements for after the migration:

- Ensure that only designated developers who use Microsoft Entra joined Windows 11 devices can access DB1 and DB2 remotely.
- Ensure that all changes to DB3, including ones within individual transactions, are audited and recorded.

Requirements. Management Requirements

ADatum identifies the following post-migration management requirements:

- Continue using Extended Events to monitor DB3.
- In Azure SQL Database, automate the management of DB3 by using elastic jobs that have database-scoped credentials.

Requirements. Business Requirements

ADatum identifies the following business requirements:

- Minimize costs whenever possible, without affecting other requirements.
- Minimize administrative effort.

You plan to deploy Instance by using the following script.

```
{  
    "type": "Microsoft.Sql/managedInstances",  
    "apiVersion": "2019-06-01-preview",  
    "name": "[parameters('instanceName')]",  
    "location": "[resourceGroup().location]",  
    "sku": {  
        "name": "[parameters('skuName')]",  
        "tier": "[parameters('skuEdition')]"  
    },  
    "dependsOn": [  
        "Microsoft.Resources/deployments/BuildMINetworking"  
    ],  
    "properties": {  
        "administratorLogin": "[parameters('adminLogin')]",  
        "administratorLoginPassword0": "[parameters('adminPassword')]",  
        "subnetId": "  
[resourceId('Microsoft.Network/virtualNetworks/subnets',parameters('netName'),parameters('subnetName'))]",  
        "storageSizeInGB": "[parameters('storageSizeInGB')]",  
        "vCores": "[parameters('vCores')]",  
        "licenseType": "[parameters('licenseType')]",  
        "hardwareFamily": "[parameters('hardwareFamily')]",  
        "collation": "[parameters('collation')]",  
        "publicDataEndpointEnabled": "true",  
        "requestedBackupStorageRedundancy": "[parameters('storageRedundancy')]"  
    }  
}
```

You need to specify the licenseType and storageRedundancy parameters. The deployment must meet the availability requirements and the business requirements for DB1 and DB2.

To what should you set each parameter? To answer, select the appropriate options in the answer area.

Answer Area

licenseType:

BasePrice
LicenseIncluded
Windows_Server

storageRedundancy:

GeoRedundantStorage
GeoZoneRedundantStorage
ZoneRedundantStorage

Explanation

Correct Answer:

Answer Area

licenseType:

BasePrice
LicenseIncluded
Windows_Server

storageRedundancy:

GeoRedundantStorage
GeoZoneRedundantStorage
ZoneRedundantStorage

Community Discussion

This is wrong. Correct answers are: BasePrice: By selecting BasePrice, you take advantage of your existing SQL Server licenses with Software Assurance, minimizing costs. GeoRedundantStorage: This storage redundancy option ensures that your data is replicated across multiple geographic locations, providing high availability and disaster recovery capabilities. ----- With the Volume licensing with Software Assurance, and valid active on-premises licenses for Windows Servers and SQL Servers that is the case here, Adatum is eligible for Azure Hybrid Benefit, and can and should use BasePrice. <https://learn.microsoft.com/en-us/samples/azure/azure-quickstart-templates/sqlmi-new-vnet/> <https://azure.microsoft.com/en-us/pricing/hybrid-benefit/#faq>

Question #353

HOTSPOT

You have an on-premises Microsoft SQL Server database named DB1.

You have an Azure subscription.

You need to migrate DB1 to an Azure SQL service that meets the following requirements:

- Protects the confidentiality of sensitive data from malware and high-privileged unauthorized database administrators
- Supports pattern matching for server-side database operations
- Uses a hardware-based encryption technology

Which Azure SQL service and attestation service should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Azure SQL service:

Azure SQL Managed Instance
The Azure SQL Database DTU purchasing model
The Azure SQL Database vCore purchasing model

Attestation service:

Host Guardian Service (HGS)
Microsoft Azure Attestation
No attestation

Explanation

Correct Answer:

Answer Area

Azure SQL service:

- Azure SQL Managed Instance
- The Azure SQL Database DTU purchasing model
- The Azure SQL Database vCore purchasing model

Attestation service:

- Host Guardian Service (HGS)
- Microsoft Azure Attestation
- No attestation

Question #354

DRAG DROP

You have two on-premises Microsoft SQL Server instances named SQL1 and SQL2.

You have an Azure subscription.

You need to sync a subset of tables between the databases hosted on SQL1 and SQL2 by using SQL Data Sync.

Which five 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.

SecExams

Actions	Answer Area
Deploy an Azure SQL database.	1
Deploy an Azure SQL managed instance.	2
Create a sync group.	3
Configure the sync group.	4
Sync the metadata database configuration.	5
Install and configure the Client Sync Agent app on SQL1 and SQL2.	

Explanation

Answer Area
1 Create a sync group.
2 Deploy an Azure SQL database.
3 Install and configure the Client Sync Agent app on SQL1 and SQL2.
4 Sync the metadata database configuration.
5 Configure the sync group.

Correct Answer:

Community Discussion

Question #355

You have an on-premises Microsoft SQL Server 2022 instance that hosts a 60-TB production database named DB1.

You plan to migrate DB1 to Azure.

You need to recommend a hosting solution for DB1.

Which Azure SQL Database service tier should you use to host DB1?

A) Hyperscale (Correct Answer)

- B) Business Critical
- C) General Purpose

Explanation

Correct Answer: A [?](#)

Community Discussion

Question #356

HOTSPOT

You have an Azure SQL database named DB1.

You have 10 Azure virtual machines that connect to a virtual network subnet named Subnet1.

You need to implement a database-level firewall that meets the following requirements:

- Ensures that only the 10 virtual machines can access DB1
- Follows the principle of least privilege

How should you configure the firewall rule, and how should you establish network connectivity from the virtual machines to DB1?

To answer, select the appropriate options in the answer area.

Answer Area

Firewall rule:

Add your client IPv4 address.
Allow Azure services and resources to access DB1.
Allow traffic from a specific virtual network.

Network connectivity:

Assign static public IP addresses to the virtual machines.
Create a private endpoint.
Create a service endpoint.

Explanation

Correct Answer:

Answer Area

Firewall rule:

Add your client IPv4 address.

Allow Azure services and resources to access DB1.

Allow traffic from a specific virtual network.

Network connectivity:

Assign static public IP addresses to the virtual machines.

Create a private endpoint.

Create a service endpoint.

Community Discussion

WRONG ANSWER Correct is: Allow traffic from a specific virtual network: This configuration restricts access to DB1 to only the virtual machines within Subnet1, ensuring that only the intended VMs can connect to the database. Create a service endpoint: Service endpoints provide secure and optimized connectivity to Azure SQL Database, ensuring that the traffic remains within the Azure network and is not exposed to the public internet. This configuration ensures that only the 10 virtual machines can access DB1, adheres to the principle of least privilege, and establishes secure network connectivity.

Question #357

You have an Azure subscription that contains an Azure SQL database named DB1.

You need to host elastic jobs by using DB1. DB1 will also be configured as a job target. The solution must support the use of location-based Conditional Access policies.

What should the elastic jobs use to access DB1?

- A) a system-assigned managed identity
- B) Azure SQL sign-in credentials
- C) database-scoped credentials (Correct Answer)**
- D) a user-assigned managed identity

Explanation

Correct Answer: C ?

Community Discussion

Selected Answer: C

Use Microsoft Entra (formerly Azure Active Directory) authentication with a user-assigned managed identity (UMI). This is the recommended authentication method.

Selected Answer: D

Question #358

HOTSPOT

You have an Azure virtual machine named Server1 that has Microsoft SQL Server installed. Server1 contains a database named DB1.

You have a logical SQL server named ASVR1 that contains an Azure SQL database named ADB1.

You plan to use SQL Data Sync to migrate DB1 from Server1 to ASVR1.

You need to prepare the environment for the migration. The solution must ensure that the connection from Server1 to ADB1 does NOT use a public endpoint.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Sync data by using:

A service endpoint
Azure Private Link
The SQL Data Sync private link

Set the database isolation level to:

REPEATABLE READ
SERIALIZABLE
SNAPSHOT ISOLATION

Explanation

Correct Answer:

Answer Area

Sync data by using:

A service endpoint
Azure Private Link
The SQL Data Sync private link

Set the database isolation level to:

REPEATABLE READ
SERIALIZABLE
SNAPSHOT ISOLATION

Question #359

HOTSPOT

You have an Azure SQL managed instance named Server1 and an Azure Blob Storage account named storage1 that contains Microsoft SQL Server database backup files.

You plan to use Log Replay Service to migrate the backup files from storage1 to Server1. The solution must use the highest level of security when connecting to storage1.

Which PowerShell cmdlet should you run, and which parameter should you specify to secure the connection? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Cmdlet:

Complete-AzSqlInstanceDatabaseLogReplay
Get-AzSqlInstanceDatabaseLogReplay
Start-AzSqlInstanceDatabaseLogReplay

Parameter:

ManagedIdentity
SharedAccessSignature
StorageAccountKey

Explanation

Correct Answer:

Answer Area

Cmdlet:

Complete-AzSqlInstanceDatabaseLogReplay
Get-AzSqlInstanceDatabaseLogReplay
Start-AzSqlInstanceDatabaseLogReplay

Parameter:

ManagedIdentity
SharedAccessSignature
StorageAccountKey

Community Discussion

Question #360

You have 25 Azure SQL databases.

You need to implement a centralized database management solution that uses Transact-SQL.

What should you include in the solution?

A) elastic jobs (Correct Answer)

- B) an Azure Automation runbook
- C) Azure Functions
- D) Azure Logic Apps

Explanation

Correct Answer: A ?

Community Discussion

Selected Answer: A

Elastic Jobs: Centralized Management: Elastic jobs allow you to manage multiple Azure SQL databases from a single job agent. This is ideal for scenarios where you need to run Transact-SQL scripts across multiple databases. Transact-SQL Support: Elastic jobs are designed to execute Transact-SQL scripts, making them a perfect fit for your requirement. Scalability: They can scale to manage a large number of databases, which is essential for your scenario with 25 databases. Automation: Elastic jobs can be scheduled to run at specific times or intervals, automating routine tasks and ensuring consistency across all databases. Why Not the Other Options? Azure Automation Runbook: While runbooks can automate tasks, they are more suited for operational tasks and not specifically designed for executing Transact-SQL scripts across multiple databases. Azure Functions: Azure Functions are great for serverless computing and event-driven tasks, but they are not specifically tailored for centralized database management using Transact-SQL. Azure Logic Apps: Logic Apps are excellent for workflow automation and integration, but they are not designed for executing Transact-SQL scripts across multiple databases in a centralized manner.

Question #361

You have an Azure virtual machine named Server1 that runs Windows Server 2022. Server1 contains an instance of Microsoft SQL Server 2022 named SQL1 and a database named DB1.

You create a master key in the master database of SQL1.

You need to create an encrypted backup of DB1.

What should you do?

- A) Create a symmetric key in DB1.
- B) Enable virtualization-based security (VBS) on Server1.

C) Create a certificate in DB1.

D) Create a certificate in the master database of SQL1. (Correct Answer)

Explanation

Correct Answer: D [?](#)

Community Discussion

Question #362

HOTSPOT

You have a SQL Server on Azure Virtual Machines instance named SQLVM1 that contains two databases named DB1 and DB2. The database and log files for DB1 and DB2 are hosted on managed disks.

You need to perform a snapshot backup of DB1 and DB2.

How should you complete the T-SQL statements? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

ALTER

▼

DATABASE
SERVER
WORKLOAD GROUP

CONFIGURATION

```
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON  
(GROUP = (db1, db2));  
BACKUP GROUP db1, db2  
TO DISK = 'f:\backup\db.bkm'
```

WITH

▼

COPY_ONLY
FILE_SNAPSHOT
METADATA_ONLY

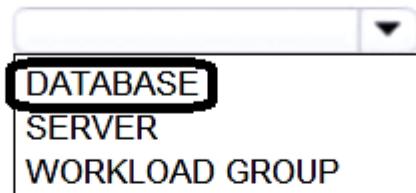
, FORMAT;

Explanation

Correct Answer:

Answer Area

ALTER

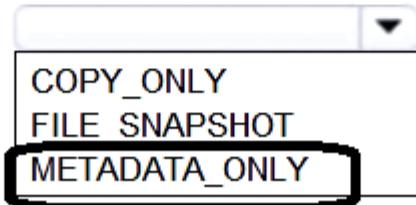


CONFIGURATION

```
SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON  
(GROUP = (db1, db2));  
BACKUP GROUP db1, db2
```

TO DISK = 'f:\backup\db.bkm'

WITH



, FORMAT;

Community Discussion

WRONG -----
ALTER SERVER CONFIGURATION SET
SUSPEND_FOR_SNAPSHOT_BACKUP = ON (GROUP = (testdb1, testdb2)); BACKUP GROUP
testdb1, testdb2 TO DISK = 'D:\Temp\db.bkm' WITH METADATA_ONLY, FORMAT; ALTER
SERVER CONFIGURATION SET SUSPEND_FOR_SNAPSHOT_BACKUP = ON

Question #363

You have an Azure subscription.

You plan to provision a single Azure SQL database.

You need to ensure that the database supports the autoscaling of compute resources.

Which service tier should you choose?

- A) Premium
- B) General Purpose (Correct Answer)**
- C) Business Critical
- D) Standard

Explanation

Correct Answer: B [?](#)

Community Discussion

Question #364

HOTSPOT

You plan to deploy an instance of SQL Server on Linux Azure Virtual Machines. The instance will run Microsoft SQL Server 2022 and use the SQL Server IaaS Agent extension for Linux.

Which Linux operating system should you deploy, and which benefit will the SQL Server IaaS Agent extension provide? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

SecExams

Answer Area

Operating system:

Red Hat Enterprise Linux (RHEL)

SUSE Linux Enterprise Server (SLES)

Ubuntu Linux

Benefit:

Automatic backup

Automatic patching

Registration of a SQL virtual machine resource in Azure

Explanation

Correct Answer:

Answer Area

Operating system:

- Red Hat Enterprise Linux (RHEL)
- SUSE Linux Enterprise Server (SLES)
- Ubuntu Linux

Benefit:

- Automatic backup
- Automatic patching
- Registration of a SQL virtual machine resource in Azure

Community Discussion

WRONG ----- Linux SQL IaaS Agent extension has the following limitations: Only SQL Server VMs running on the Ubuntu Linux operating system are supported. Other Linux distributions are not currently supported. Benefit: Registration of a SQL virtual machine resource in Azure

Question #365

DRAG DROP

You have a burstable Azure virtual machine named VM1 that hosts an instance of Microsoft SQL Server.

You need to attach an Azure ultra disk to VM1. The solution must minimize downtime on VM1.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

SecExams

Actions	Answer Area
Resize VM1.	
Set Enable Ultra disk compatibility to Yes.	
Stop and deallocate VM1.	
Attach the ultra disk.	
Start VM1.	

Explanation

Correct Answer:

Actions	Answer Area
Resize VM1.	Stop and deallocate VM1.
Set Enable Ultra disk compatibility to Yes.	Resize VM1.
Stop and deallocate VM1.	Set Enable Ultra disk compatibility to Yes.
Attach the ultra disk.	Attach the ultra disk.
Start VM1.	Start VM1.

Community Discussion

Question #366

HOTSPOT

You have an Azure subscription that contains a resource group named RG1. RG1 contains an Azure SQL Server named Server1 in the West US Azure region.

You need to ensure that any Azure services deployed to RG1 can access Server1.

How should you complete the Azure Command-Line Interface (CLI) command?
To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
az sql server
  --resource-group rg1 \
  --server server1 \
  --name AllowAzureServices \
    create \
      
      
      
      
--outbound-rule-fqdn allowedFQDN
--start-ip-address 0.0.0.0 --end-ip-address 0.0.0.0
--start-ip-address 13.86.217.0 --end-ip-address 13.86.217.255
--start-ipv6-address 9a41:a145:2a80:6c8d:4628:a1b3:5812:3283 --end-ipv6-address 9a41:a145:2a80:6c8d:4628:a1b3:5812:3283
```

Explanation

Correct Answer:

Answer Area

```
az sql server
  --resource-group rg1 \
    
    
    
    
  --server server1 \
  --name AllowAzureServices \
    create \
      
      
      
      
```

Community Discussion

```
Correct :) az sql server firewall-rule create \ --resource-group RG1 \ --server Server1 \ --
name allowazureservices \ --start-ip-address 0.0.0.0 \ --end-ip-address 0.0.0.0
```

Question #367

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 the on-premises networks shown in the following table.

Name	Location	Subnet
Branch1	Sydney	131.107.10.0/24
Branch2	Melbourne	131.107.11.0/24

You have an Azure subscription that contains an Azure SQL Database server named SQL1. SQL1 contains two databases named DB1 and DB2.

You need to configure access to DB1 and DB2. The solution must meet the following requirements:

- Ensure that DB1 can be accessed only by users in Branch1.
- Ensure that DB2 can be accessed only by users in Branch2.

Solution: You connect to DB1 and run the following command.

```
EXECUTE sp_set_firewall_rule 'Allow db1 users', '131.107.10.0', '131.107.10.255'
```

You connect to DB2 and run the following command.

```
EXECUTE sp_set_database_firewall_rule 'Allow db2 users', '131.107.11.0', '131.107.11.255'
```

Does this meet the goal?

A) Yes (Correct Answer)

B) No

Explanation

Correct Answer: A [?](#)

Community Discussion

Question #368

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 the on-premises networks shown in the following table.

Name	Location	Subnet
Branch1	Sydney	131.107.10.0/24
Branch2	Melbourne	131.107.11.0/24

You have an Azure subscription that contains an Azure SQL Database server named SQL1. SQL1 contains two databases named DB1 and DB2.

You need to configure access to DB1 and DB2. The solution must meet the following requirements:

- Ensure that DB1 can be accessed only by users in Branch1.
- Ensure that DB2 can be accessed only by users in Branch2.

Solution: You connect to the master of SQL1 and run the following command.

```
EXECUTE sp_set_firewall_rule 'Allow db1 and db2 users', '131.107.11.0',  
'131.107.11.255'
```

Does this meet the goal?

A) Yes

B) No (Correct Answer)

Explanation

Correct Answer: B ?

Community Discussion

Question #369

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 the on-premises networks shown in the following table.

Name	Location	Subnet
Branch1	Sydney	131.107.10.0/24
Branch2	Melbourne	131.107.11.0/24

You have an Azure subscription that contains an Azure SQL Database server named SQL1. SQL1 contains two databases named DB1 and DB2.

You need to configure access to DB1 and DB2. The solution must meet the following requirements:

- Ensure that DB1 can be accessed only by users in Branch1.
- Ensure that DB2 can be accessed only by users in Branch2.

Solution: You connect to DB1 and run the following command.

```
EXECUTE sp_set_firewall_rule 'Deny db1 users', '131.107.11.0', '131.107.11.255'
```

You connect to DB2 and run the following command.

```
EXECUTE sp_set_database_firewall_rule 'Deny db2 users', '131.107.10.0', '131.107.10.255'
```

Does this meet the goal?

- A) Yes

B) No (Correct Answer)

Explanation

Correct Answer: B [?](#)

Community Discussion

Question #370

HOTSPOT

You have an on-premises Microsoft SQL Server instance named SQLSVR1 that hosts a database named DB1.

You have an Azure subscription that contains an Azure SQL database named SQLDB1.

You need to perform the following actions:

- Sync DB1 with SQLDB1 by using SQL Data Sync.
- Configure an index in DB1 by using CREATE INDEX.
- Add data to DB1 at regular intervals by using BULK INSERT.

Which option should you specify when you use BULK INSERT, and which parameter should you specify when you use CREATE INDEX? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Option:

CHECK_CONSTRAINTS

FIRE_TRIGGERS

ROWS_PER_BATCH

Parameter:

IGNORE_DUP_KEY

UNIQUE

WHERE

Explanation

Answer Area

Option: CHECK_CONSTRAINTS
 FIRE_TRIGGERS
 ROWS_PER_BATCH

Parameter: IGNORE_DUP_KEY
 UNIQUE
 WHERE

Correct Answer:

Question #371

HOTSPOT

You have an Azure subscription that contains an Azure SQL database named DB1.

You execute the following T-SQL statements against DB1.

```
CREATE TABLE table1 (
    column1 TINYINT,
    column2 VARCHAR(255),
    column3 NCHAR(10),
    column4 BINARY(50),
    column5 DATETIME2
);
```

```
ALTER TABLE table1 REBUILD WITH (DATA_COMPRESSION = ROW);
```

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

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
All the fields in column3 will occupy 10 bytes on disk.	<input type="radio"/>	<input type="radio"/>
Dictionary compression will be used to reduce the size of table1 on disk.	<input type="radio"/>	<input type="radio"/>
The data types stored in column1, column2, and column4 support compression.	<input type="radio"/>	<input type="radio"/>

Explanation

Correct Answer:

Answer Area

Statements

All the fields in column3 will occupy 10 bytes on disk.

Dictionary compression will be used to reduce the size of table1 on disk.

The data types stored in column1, column2, and column4 support compression.

Community Discussion

Wrong ----- All fields in column3 will occupy 10 bytes on disk: NO. The NVARCHAR(10) data type stores variable-length Unicode data. Each character in NVARCHAR takes 2 bytes, but since it's variable-length, it will only use as much space as needed for the actual data stored, plus 2 bytes for the length prefix. Dictionary compression will be used to reduce the size of table1 on disk: NO. The DATA_COMPRESSION = ROW option specifies row-level compression, not dictionary compression. Row-level compression reduces the storage size by using techniques like prefix and dictionary compression, but it is not the same as dictionary compression alone. The data types stored in column1, column2 and column4 support compression: YES. The data types TINYINT, VARCHAR, and BINARY support row-level compression. Row-level compression can reduce the storage size of these data types by eliminating unnecessary bytes and using more efficient storage formats.

Question #372

You have an Azure subscription that contains a SQL Server on Azure Virtual Machines instance named SQLVM1. SQLVM1 has the following configurations:

- Automated patching is enabled.
- The SQL Server IaaS Agent extension is installed.
- The Microsoft SQL Server instance on SQLVM1 is managed by using the Azure portal.

You need to automate the deployment of cumulative updates to SQLVM1 by using Azure Update Manager. The solution must ensure that the SQL Server instance on SQLVM1 can be managed by using the Azure portal.

What should you do first on SQLVM1?

- A) Install the Azure Monitor Agent.
- B) Uninstall the SQL Server IaaS Agent extension.
- C) Install the Log Analytics agent. (Correct Answer)**
- D) Set Automated patching to Disable.

Explanation

Correct Answer: C [?](#)

Community Discussion

Question #373

You have an Azure subscription. The subscription contains three virtual machines that run Red Hat Enterprise Linux (RHEL).

You plan to implement a highly available deployment of Microsoft SQL Server 2022 on the virtual machines by using failover cluster instances (FCIs).

You need to prepare for the implementation.

What should you do first on each server?

- A) Create the FCI disk and network resources.
- B) Install a named SQL Server instance.

C) Install the cluster resource manager and the FCI resource agent. (Correct Answer)

- D) Install the default SQL Server instance.

Explanation

Correct Answer: C ?

Community Discussion