AWS Certified Database – Specialty
(DBS-C01) Exam Guide

Introduction

The AWS Certified Database – Specialty (DBS-C01) exam is intended for individuals who perform a database-focused role. This exam validates a candidate's comprehensive understanding of databases, including the concepts of design, migration, deployment, access, maintenance, automation, monitoring, security, and troubleshooting.

The exam also validates a candidate's ability to complete the following tasks:

- Understand and differentiate the key features of AWS database services
- Analyze needs and requirements to design and recommend appropriate database solutions by using AWS services

Target candidate description

The target candidate should have a minimum of 5 years of experience with common database technologies, at least 2 years of hands-on experience working on AWS, and experience and expertise working with on-premises and AWS Cloud-based relational and NoSQL databases.

What is considered out of scope for the target candidate?

The following is a non-exhaustive list of related job tasks that the target candidate is not expected to be able to perform. These items are considered out of scope for the exam:

- Extract, transform, and load (ETL) operations
- Data pipelines
- Design for machine learning
- Data lake architectures
- Complex stored procedures

For a detailed list of specific tools and technologies that might be covered on the exam, as well as lists of in-scope and out-of-scope AWS services, refer to the Appendix.

Exam content

Response types

There are two types of questions on the exam:

- **Multiple choice:** Has one correct response and three incorrect responses (distractors)
- **Multiple response:** Has two or more correct responses out of five or more response options

Select one or more responses that best complete the statement or answer the question. Distractors, or incorrect answers, are response options that a candidate with incomplete knowledge or skill might choose. Distractors are generally plausible responses that match the content area.

Unanswered questions are scored as incorrect; there is no penalty for guessing. The exam includes 50 questions that affect your score.

Unscored content

The exam includes 15 unscored questions that do not affect your score. AWS collects information about candidate performance on these unscored questions to evaluate these questions for future use as scored questions. These unscored questions are not identified on the exam.

Exam results

The AWS Certified Database – Specialty (DBS-C01) exam is a pass or fail exam. The exam is scored against a minimum standard established by AWS professionals who follow certification industry best practices and guidelines.

Your results for the exam are reported as a scaled score of 100–1,000. The minimum passing score is 750. Your score shows how you performed on the exam as a whole and whether or not you passed. Scaled scoring models help equate scores across multiple exam forms that might have slightly different difficulty levels.

Your score report could contain a table of classifications of your performance at each section level. This information is intended to provide general feedback about your exam performance. The exam uses a compensatory scoring model, which means that you do not need to achieve a passing score in each section. You need to pass only the overall exam.

Each section of the exam has a specific weighting, so some sections have more questions than other sections have. The table contains general information that highlights your strengths and weaknesses. Use caution when interpreting section-level feedback.

Content outline

This exam guide includes weightings, test domains, and objectives for the exam. It is not a comprehensive listing of the content on the exam. However, additional context for each of the objectives is available to help guide your preparation for the exam. The following table lists the main content domains and their weightings. The table precedes the complete exam content outline, which includes the additional context. The percentage in each domain represents only scored content.

Domain	% of Exam
Domain 1: Workload-Specific Database Design	26%
Domain 2: Deployment and Migration	20%
Domain 3: Management and Operations	18%
Domain 4: Monitoring and Troubleshooting	18%
Domain 5: Database Security	18%
TOTAL	**100%**

Domain 1: Workload-Specific Database Design

1.1 Select appropriate database services for specific types of data and workloads.
- Differentiate between ACID vs. BASE workloads
- Explain appropriate uses of types of databases (e.g., relational, key-value, document, in-memory, graph, time series, ledger)
- Identify use cases for persisted data vs. ephemeral data

1.2 Determine strategies for disaster recovery and high availability.
- Select Region and Availability Zone placement to optimize database performance
- Determine implications of Regions and Availability Zones on disaster recovery/high availability strategies
- Differentiate use cases for read replicas and Multi-AZ deployments

1.3 Design database solutions for performance, compliance, and scalability.
- Recommend serverless vs. instance-based database architecture
- Evaluate requirements for scaling read replicas
- Define database caching solutions
- Evaluate the implications of partitioning, sharding, and indexing
- Determine appropriate instance types and storage options
- Determine auto-scaling capabilities for relational and NoSQL databases
- Determine the implications of Amazon DynamoDB adaptive capacity
- Determine data locality based on compliance requirements

1.4 Compare the costs of database solutions.
- Determine cost implications of Amazon DynamoDB capacity units, including on-demand vs. provisioned capacity
- Determine costs associated with instance types and automatic scaling
- Design for costs including high availability, backups, multi-Region, Multi-AZ, and storage type options
- Compare data access costs

Domain 2: Deployment and Migration

2.1 Automate database solution deployments.
- Evaluate application requirements to determine components to deploy
- Choose appropriate deployment tools and services (e.g., AWS CloudFormation, AWS CLI)

2.2 Determine data preparation and migration strategies.
- Determine the data migration method (e.g., snapshots, replication, restore)
- Evaluate database migration tools and services (e.g., AWS DMS, native database tools)
- Prepare data sources and targets
- Determine schema conversion methods (e.g., AWS Schema Conversion Tool)
- Determine heterogeneous vs. homogeneous migration strategies

2.3 Execute and validate data migration.
- Design and script data migration
- Run data extraction and migration scripts
- Verify the successful load of data

Domain 3: Management and Operations

3.1 Determine maintenance tasks and processes.
- Account for the AWS shared responsibility model for database services
- Determine appropriate maintenance window strategies
- Differentiate between major and minor engine upgrades

3.2 Determine backup and restore strategies.
- Identify the need for automatic and manual backups/snapshots
- Differentiate backup and restore strategies (e.g., full backup, point-in-time, encrypting backups cross-Region)
- Define retention policies
- Correlate the backup and restore to recovery point objective (RPO) and recovery time objective (RTO) requirements

3.3 Manage the operational environment of a database solution.
- Orchestrate the refresh of lower environments
- Implement configuration changes (e.g., in Amazon RDS option/parameter groups or Amazon DynamoDB indexing changes)
- Automate operational tasks
- Take action based on AWS Trusted Advisor reports

Domain 4: Monitoring and Troubleshooting

4.1 Determine monitoring and alerting strategies.
- Evaluate monitoring tools (e.g., Amazon CloudWatch, Amazon RDS Performance Insights, database native)
- Determine appropriate parameters and thresholds for alert conditions
- Use tools to notify users when thresholds are breached (e.g., Amazon SNS, Amazon SQS, Amazon CloudWatch dashboards)

4.2 Troubleshoot and resolve common database issues.
- Identify, evaluate, and respond to categories of failures (e.g., troubleshoot connectivity; instance, storage, and partitioning issues)
- Automate responses when possible

4.3 Optimize database performance.
- Troubleshoot database performance issues
- Identify appropriate AWS tools and services for database optimization
- Evaluate the configuration, schema design, queries, and infrastructure to improve performance

Domain 5: Database Security

5.1 Encrypt data at rest and in transit.
- Encrypt data in relational and NoSQL databases
- Apply SSL connectivity to databases
- Implement key management (e.g., AWS KMS, AWS CloudHSM)

5.2 Evaluate auditing solutions.
- Determine auditing strategies for structural/schema changes (e.g., DDL)
- Determine auditing strategies for data changes (e.g., DML)
- Determine auditing strategies for data access (e.g., queries)
- Determine auditing strategies for infrastructure changes (e.g., AWS CloudTrail)
- Enable the export of database logs to Amazon CloudWatch Logs

5.3 Determine access control and authentication mechanisms.
- Recommend authentication controls for users and roles (e.g., IAM, native credentials, Active Directory)
- Recommend authorization controls for users (e.g., policies)

5.4 Recognize potential security vulnerabilities within database solutions.
- Determine security group rules and NACLs for database access
- Identify relevant VPC configurations (e.g., VPC endpoints, public vs. private subnets, demilitarized zone)
- Determine appropriate storage methods for sensitive data

Appendix

Which key tools, technologies, and concepts might be covered on the exam?

The following is a non-exhaustive list of the tools and technologies that could appear on the exam. This list is subject to change and is provided to help you understand the general scope of services, features, or technologies on the exam. AWS services are grouped according to their primary functions. While some of these technologies will likely be covered more than others on the exam, the order and placement of them in this list is no indication of relative weight or importance:

AWS services and features

Application Integration:
- Amazon Simple Notification Service (Amazon SNS)
- Amazon Simple Queue Service (Amazon SQS)

AWS Cost Management:
- AWS Budgets
- Cost Explorer

Compute:
- Amazon EC2
- Amazon Elastic Container Service (Amazon ECS)
- Amazon Elastic Kubernetes Service (Amazon EKS)
- Elastic Load Balancing
- AWS Lambda

Database:
- Amazon Aurora
- Amazon DocumentDB (with MongoDB compatibility)
- Amazon DynamoDB
- Amazon DynamoDB Accelerator (DAX)
- Amazon ElastiCache
- Amazon Neptune
- Amazon Quantum Ledger Database (Amazon QLDB)
- Amazon RDS
- Amazon Redshift
- Amazon Timestream

Management and Governance:
- AWS Auto Scaling
- AWS Command Line Interface (CLI)
- AWS CloudFormation
- AWS CloudTrail
- Amazon CloudWatch
- AWS Config
- AWS Trusted Advisor

Migration and Transfer:
- AWS Database Migration Service (AWS DMS)
- AWS DataSync
- AWS Schema Conversion Tool
- AWS Snow Family

Networking and Content Delivery:
- AWS Direct Connect
- Amazon Route 53
- Amazon VPC (and associated features)

Security, Identity, and Compliance:
- AWS CloudHSM
- AWS Directory Service
- AWS Identity and Access Management (IAM)
- AWS Key Management Service (AWS KMS)
- AWS Secrets Manager

Storage:
- Amazon Elastic Block Store (Amazon EBS)
- Amazon S3
- Amazon S3 Glacier

Out-of-scope AWS services and features

The following is a non-exhaustive list of AWS services and features that are not covered on the exam. These services and features do not represent every AWS offering that is excluded from the exam content. Services or features that are entirely unrelated to the target job roles for the exam are excluded from this list because they are assumed to be irrelevant.

Out-of-scope AWS services and features include the following:

Analytics:
- Amazon Kinesis
- Amazon QuickSight

Business Application:
- All business application services (for example, Amazon Chime)

Developer Tools:
- All developer tools (for example, AWS CodeBuild)

Internet of Things (IoT):
- All IoT services (for example, AWS IoT Core)

Management and Governance:

- AWS Chatbot
- AWS Compute Optimizer
- AWS Control Tower
- AWS Console Mobile Application
- AWS License Manager
- AWS Managed Services
- Amazon Managed Service for Grafana (AMG)
- Amazon Managed Service for Prometheus (AMP)
- AWS OpsWorks
- AWS Organizations
- AWS Personal Health Dashboard
- AWS Proton
- AWS Service Catalog
- AWS Systems Manager
- AWS Well-Architected Tool

Media Services:

- All media services (for example, AWS Elemental MediaConnect)

Migration and Transfer:

- AWS Application Discovery Service
- AWS Application Migration Service
- AWS Migration Hub
- AWS Server Migration Service (AWS SMS)
- AWS Transfer Family