Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

To learn **AWS Cloud Database Administration** in 7 days, you need a focused plan that covers the key concepts, services, and best practices. Here's a comprehensive learning plan that will take you through the basics of AWS cloud databases, essential AWS database services, and practical skills required for database administration on AWS.

Day 1: Introduction to AWS Cloud and Database Concepts

- **Overview of AWS Cloud:**
  - Understand AWS global infrastructure: regions, availability zones, edge locations.
  - Familiarize yourself with the AWS Management Console, CLI, and SDKs.
  - Learn about AWS security, IAM (Identity and Access Management), and VPC (Virtual Private Cloud).
  - **Resources:**
    - AWS Free Tier to start exploring services.
    - AWS Documentation
- **Database Fundamentals in AWS:**
  - Types of databases (Relational, NoSQL, In-memory, Data Warehouses).
  - The role of a Database Administrator (DBA) in the cloud.
  - Benefits of using cloud databases (scalability, high availability, backup, and recovery).
  - **Resources:**
    - AWS Database Blog
    - Introduction to AWS Databases

Day 2: AWS Relational Database Service (RDS)

- **Introduction to AWS RDS:**
  - Learn about Amazon RDS, a fully managed relational database service.
  - Understand supported databases: MySQL, PostgreSQL, MariaDB, Oracle, and MS SQL Server.
  - Setup and launch an RDS instance.
  - **Hands-on Practice:**
    - Launch an RDS instance with MySQL or PostgreSQL.
    - Configure security groups, subnets, and access.
    - Connect to the RDS instance using the client (e.g., MySQL Workbench, pgAdmin).
  - **Resources:**
    - RDS Documentation
    - RDS Overview

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Day 3: Advanced RDS Features and Monitoring

- **Advanced RDS Topics:**
  - Learn about automated backups, snapshots, and point-in-time recovery.
  - Understand RDS Multi-AZ for high availability and read replicas for scaling read workloads.
  - Understand RDS security: IAM roles, SSL/TLS, and encryption (at rest and in transit).
  - **Hands-on Practice:**
    - Configure RDS backup and automated snapshot policies.
    - Set up a read replica for RDS.
    - Enable encryption for an RDS instance.
  - **Resources:**
    - Amazon RDS Multi-AZ
    - Monitoring RDS with CloudWatch

Day 4: Amazon DynamoDB - NoSQL Database

- **Introduction to DynamoDB:**
  - Learn about Amazon DynamoDB, a fully managed NoSQL database service.
  - Understand tables, partitions, and indexes (Global Secondary Indexes, Local Secondary Indexes).
  - Configure provisioned and on-demand capacity.
  - **Hands-on Practice:**
    - Create a DynamoDB table.
    - Learn about item, attributes, and key schema.
    - Query and scan the table using AWS CLI.
  - **Resources:**
    - DynamoDB Documentation
    - DynamoDB Free Tier

Day 5: Amazon Aurora and Database Migration

- **Amazon Aurora Overview:**
  - Learn about Amazon Aurora (MySQL and PostgreSQL compatible).
  - Understand Aurora's performance and scalability benefits.
  - Learn about Aurora Global Databases for disaster recovery.
  - **Hands-on Practice:**
    - Launch an Amazon Aurora MySQL database cluster.

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    - Test replication features and failover.
- **AWS Database Migration Service (DMS):**
    - Understand how DMS helps to migrate databases to AWS with minimal downtime.
    - Learn about migration from on-premises databases to Amazon RDS or Aurora.
    - **Hands-on Practice:**
        - Set up DMS for a basic database migration.
    - **Resources:**
        - Amazon Aurora Documentation
        - DMS Overview

Day 6: Amazon ElastiCache and Redshift

- **Amazon ElastiCache (In-memory Database):**
    - Learn about Amazon ElastiCache, a managed in-memory data store.
    - Understand the use cases for Redis and Memcached.
    - **Hands-on Practice:**
        - Launch an ElastiCache Redis cluster.
        - Set up a connection to your application.
- **Amazon Redshift (Data Warehouse):**
    - Learn about Amazon Redshift, a fully managed data warehouse service.
    - Understand how Redshift uses columnar storage and compression to optimize query performance.
    - **Hands-on Practice:**
        - Set up an Amazon Redshift cluster.
        - Load sample data into Redshift and run basic queries.
    - **Resources:**
        - ElastiCache Documentation
        - Amazon Redshift Documentation

Day 7: AWS Database Security and Best Practices

- **Database Security on AWS:**
    - Learn how to implement encryption (at rest and in transit) for RDS, DynamoDB, and Aurora.
    - Understand VPC security groups, IAM roles, and access controls.
    - Use AWS KMS (Key Management Service) for encryption key management.

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- **AWS Database Monitoring and Optimization:**
  - Learn how to monitor and troubleshoot databases using Amazon CloudWatch.
  - Understand best practices for scaling databases and optimizing performance (e.g., using the right indexes).
  - **Hands-on Practice:**
    - Set up CloudWatch Alarms for database metrics like CPU usage, IOPS, and storage.
    - Enable logging for Amazon RDS.
    - Review database performance insights in RDS or Redshift.
  - **Resources:**
    - AWS Security Best Practices
    - CloudWatch for AWS Databases
    - Database Performance Tuning on AWS

Additional Resources

- **AWS Training and Certification:** AWS Training
- **AWS Well-Architected Framework:** Well-Architected Framework
- **AWS Documentation for Databases:** https://docs.aws.amazon.com/whitepapers/latest/aws-overview/database.html

Final Thoughts

- **Practice is Key:** Hands-on experience is crucial. Throughout the week, try to perform tasks in the AWS Console, CLI, or through AWS SDKs.
- **Stay Up to Date:** AWS constantly evolves, so check AWS blogs, webinars, and AWS re:Invent for new features.
- **Get Certified:** After completing this 7-day plan, you can consider pursuing the AWS Certified Database - Specialty certification for a structured, in-depth understanding of AWS databases.

Good luck with your learning journey!