Implement scalable database solutions using Azure SQL (DP-300)

Durée: 4 Jours **Réf de cours: M-DP300** **Méthodes d'apprentissage: Classe à distance**

Résumé:

This course provides students with the knowledge and skills to administer a SQL Server database infrastructure.
This course provides students with the knowledge and skills to administer a SQL Server database infrastructure for cloud, on-premises and hybrid relational databases and who work with the Microsoft PaaS relational database offerings. Additionally, it will be of use to individuals who develop applications that deliver content from SQL-based relational databases.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Classe à Distance - site Client

Cette formation peut être suivie à distance en synchrone depuis n'importe quel site pourvu d'une connexion internet (2 Mb/s en symétrique recommandés). Le programme (théorie et pratique) suit le même déroulé pédagogique qu'en présentiel. La solution technologique adoptée permet aux apprenants à distance de suivre les présentations faites au tableau, de voir et d'entendre l'instructeur et les participants en temps réel, mais également d'échanger avec eux.

Public visé:

The audience for this course is data professionals managing data and databases who want to learn about administering the data platform technologies that are available on Microsoft Azure. This course is also valuable for data architects and application developers who need to understand what technologies are available for the data platform with Azure and how to work with those technologies through applications.

Objectifs pédagogiques:

- Students will learn to,
- Prepare to maintain SQL databases on Azure
- Deploy IaaS solutions with Azure SQL
- Deploy PaaS solutions with Azure SQL
- Evaluate strategies for migrating to Azure SQL
- Migrate SQL Server workloads to Azure SQL Database
- Migrate SQL workloads to Azure Managed Instances
- Configure database authentication and authorization
- Protect data in-transit and at rest
- Implement compliance controls for sensitive data
- Describe performance monitoring
- Configure SQL Server resources for optimal performance
- Configure databases for optimal performance
- Explore query performance optimization
- Evaluate performance improvements
- Explore performance-based design
- Automate deployment of database resources
- Create and manage SQL Agent jobs
- Manage Azure PaaS tasks using automation
- Describe high availability and disaster recovery strategies
- Explore IaaS and PaaS solutions for high availability and disaster recovery
- Back up and restore databases

Pré-requis:

Test et certification

Successful Azure Database Administrators start this role with professional experience in database management and technical knowledge of cloud technologies.

Specifically:

- Working with, maintaining, and developing with SQL Server
- Experience with Azure, such as deploying and managing resources

At a minimum, you should know the information in the following online training before attending the course:

- M-AZ900 - Introduction to Cloud Infrastructure (AZ-900)
- M-DP900 - Introduction to Microsoft Azure Data (DP-900)

Exam DP-300: Implement scalable database solutions using Azure SQL

- Microsoft Certified: Azure Database Administrator Associate

Contenu:

Module 1 : Plan and implement data platform resources

- Prepare to maintain SQL Server-based databases on Azure
- Deploy IaaS solutions with Azure SQLDeploy PaaS solutions with Azure SQLMigrate SQL Server workloads to Azure SQL Database
- Migrate SQL Server workloads to Azure SQL Managed Instance

Module 2 : Implement a secure environment for a database service

- Explore the basics of SQL Server in an Infrastructure as a Service (IaaS) offering
- Learn the available options for provisioning and deployment
- Deploy SQL Server into an Azure Virtual Machine

Module 3 : Monitor and optimize operational resources in Azure SQL

Module 4 : Optimize query performance in Azure SQL

Module 5 : Automate database tasks for Azure SQL

Module 6 : Plan and implement a high availability and disaster recovery environment

Module 7 : Configure database authentication and authorization

- Learn about authentication options for Azure SQL Database
- Create various security principals
- Configure permissions within a SQL database
- Identify authentication and authorization failures

Module 8 : Protect data in-transit and at rest

- Understand the data encryption options available in the various platforms
- Implement object level encryption
- Understand the difference between database and server firewall rules for Azure SQL Database
- Explore Always Encrypted with secure enclaves

Module 9 : Implement compliance controls for sensitive data

- Plan and implement data classification in Azure SQL Database
- Understand and configure row-level security and dynamic data masking
- Understand the usage of Microsoft Defender for SQL
- Explore how Azure SQL Database Ledger works

Module 10 : Describe performance monitoring

- Review potential performance issues.
- Identify critical Azure metrics.
- Learn how to collect metrics for an established baseline.
- Use extended events for performance analysis.
- Understand Azure SQL Database Intelligent Insights.

Module 11 : Configure SQL Server resources for optimal performance

- Understand your options for configuration of Azure storage
- Learn how to configure TempDB data files in SQL Server
- Learn how to choose the right type of VM for SQL Server workloads
- Understand the use cases and configuration of Resource Governor in SQL Server

Module 12 : Configure databases for optimal performance

- Understand database scoped configuration options
- Understand maintenance tasks related to indexing and statistics
- Understand the features of Intelligent Query Processing (IQP)
- Explore the automatic tuning feature in Azure

Module 13 : Explore query performance optimization

- Generate and save execution plans

Module 15 : Explore performance-based design

- Explore normal forms and how they affect database design
- Choose appropriate datatypes for your data
- Evaluate appropriate index types

Module 16 : Automate deployment of database resources

- Describe the deployment models available on Azure
- Deploy database resources using PowerShell and Azure CLI
- Deploy an Azure Resource Manager template and Bicep
- Understand the difference between multiple command-line options

Module 17 : Create and manage SQL Agent jobs

- Schedule necessary maintenance activities for your databases.
- Configure notifications and alerts on SQL Server Agent jobs, and SQL Server.
- Configure alerts based on performance monitor values.

Module 18 : Manage Azure PaaS tasks using automation

- Understand the benefits of Azure policy
- Explore the capabilities of Azure Automation
- Configure elastic jobs
- Use Logic Apps for database workflow

Module 19 : Describe high availability and disaster recovery strategies

- Define recovery time objective and recovery point objective
- Explore the available high availability and disaster recovery options for both IaaS and PaaS
- Devise an appropriate high availability and disaster recovery strategy

Module 20 : Explore IaaS and PaaS solutions for high availability and disaster recovery

- Explore options for deploying a WSFC in Azure
- Explore options for deploying an AG in Azure
- Implement Temporal Tables
- Plan active geo-replication and auto-failover groups

Module 21 : Back up and restore databases

- Compare the different types of execution plans
- Understand how and why query plans are generated
- Explain the purpose and benefits of the Query Store
- Investigate the available reports and data in the Query Store

Module 14 : Evaluate performance improvements

- Determine when changing indexes or defining new ones can affect performance
- Evaluate wait statistics as an aid in finding areas for performance improvement
- Understand how query hints work, and when to use them

- Explore backup and restore options for IaaS
- Implement backup and restore for PaaS

Autres moyens pédagogiques et de suivi:

• Compétence du formateur : Les experts qui animent la formation sont des spécialistes des matières abordées et ont au minimum cinq ans d'expérience d'animation. Nos équipes ont validé à la fois leurs connaissances techniques (certifications le cas échéant) ainsi que leur compétence pédagogique.
• Suivi d'exécution : Une feuille d'émargement par demi-journée de présence est signée par tous les participants et le formateur.
• En fin de formation, le participant est invité à s'auto-évaluer sur l'atteinte des objectifs énoncés, et à répondre à un questionnaire de satisfaction qui sera ensuite étudié par nos équipes pédagogiques en vue de maintenir et d'améliorer la qualité de nos prestations.

Délais d'inscription :

• Vous pouvez vous inscrire sur l'une de nos sessions planifiées en inter-entreprises jusqu'à 5 jours ouvrés avant le début de la formation sous réserve de disponibilité de places et de labs le cas échéant.
• Votre place sera confirmée à la réception d'un devis ou """"booking form""""" signé. Vous recevrez ensuite la convocation et les modalités d'accès en présentiel ou distanciel.
• Attention, si cette formation est éligible au Compte Personnel de Formation, vous devrez respecter un délai minimum et non négociable fixé à 11 jours ouvrés avant le début de la session pour vous inscrire via moncompteformation.gouv.fr.

Accueil des bénéficiaires :

• En cas de handicap : plus d'info sur globalknowledge.fr/handicap
• Le Règlement intérieur est disponible sur globalknowledge.fr/reglement