€TRAINING

Administering and Implementations of Microsoft SQL

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Introduction:

This training program provides participants with essential skills for administering and implementing Microsoft SQL Server. It empowers them to effectively manage SQL Server environments, optimize performance, and ensure data integrity and security.

Program Objectives:

At the end of this program, participants will be able to:

- Administer SQL Server environments with confidence.

- Implement and configure SQL Server instances and databases.

- Optimize performance and ensure high availability.

- Manage security and backup strategies effectively.

- Troubleshoot and resolve common SQL Server issues.

Targeted Audience:

- Database Administrators.

- IT Professionals involved in SQL Server management.

- System Administrators.

- Database Developers.

- IT Consultants.

Program Outline:

Unit 1:

Introduction to Microsoft SQL Server:

- Overview of SQL Server architecture and components.

- Installation and configuration of SQL Server.

- Understanding SQL Server editions and features.

- Basic SQL Server management tools and interfaces.

- Initial setup and post-installation tasks.

Unit 2:

Database Design and Implementation:

- Database design principles and best practices.

- Creating and managing databases and tables.

- Indexing and optimizing table performance.

- Implementing database relationships and constraints.

- Data types, normalization, and denormalization.

Unit 3:

SQL Server Security:

- Configuring SQL Server security settings.

- Managing logins, users, and roles.

- Implementing database-level and server-level security.

- Encryption techniques and data masking.

- Auditing and monitoring security events.

Unit 4:

Backup and Recovery:

- Understanding backup types and strategies.

- Configuring and managing backup schedules.

- Performing full, differential, and transaction log backups.

- Restoring databases and disaster recovery planning.

- Backup and recovery best practices.

Unit 5:

Performance Tuning and Optimization:

- Identifying performance bottlenecks.

- Indexing strategies and query optimization.

- Analyzing and tuning SQL Server queries.

- Using SQL Server Profiler and Performance Monitor.

- Implementing and monitoring Resource Governor.

Unit 6:

SQL Server High Availability:

- Configuring SQL Server Always On Availability Groups.

- Implementing SQL Server Failover Clustering.

- Understanding database mirroring and log shipping.

- High availability and disaster recovery planning.

- Monitoring and maintaining high availability solutions.

Unit 7:

SQL Server Integration Services SSIS:

- Introduction to SSIS and its components.

- Creating and managing SSIS packages.

- Data flow and control flow in SSIS.

- ETL processes and data transformations.

- Troubleshooting SSIS packages and performance.

Unit 8:

SQL Server Analysis Services SSAS:

- Introduction to SSAS and its components.

- Designing and implementing OLAP cubes.

- Creating and managing data mining models.

- Configuring and deploying SSAS projects.

- Analyzing and visualizing data with SSAS.

Unit 9:

SQL Server Reporting Services SSRS:

- Introduction to SSRS and its components.

- Designing and creating reports.

- Managing report subscriptions and schedules.

- Implementing report parameters and filters.

- Deploying and securing SSRS reports.

Unit 10:

Advanced SQL Server Topics:

- Implementing and managing SQL Server Service Broker.

- Working with SQL Server Agent jobs and automation.

- Advanced data integration and data warehousing techniques.

- SQL Server management through PowerShell.

- Future trends and emerging technologies in SQL Server.