Security and Encryption in SQL Server 2005/2008

Hands-on course of 3 days - 21h
Ref.: SCS - Price 2024: CHF2 650 (excl. taxes)

This training course will show you how to protect your SQL Server platforms and the data they contain. You will learn how to secure access, encrypt data, manage permissions, audit connection data and structure changes, and to protect your data against SQL injection.

EXERCISE
Labs are held on Windows 2003 Server and SQL Server 2008. Most subjects can be transposed on SQL Server 2005.

THE PROGRAMME
last updated: 01/2018

1) Securing access and server
- Securing physical servers and their databases files.
- Authentication mechanism and connection encryption
- Securing endpoints and SQL Browser
- Protecting backups

Exercise : Encrypting connection between client and server, creating encrypted backups

2) Authentication and security model
- Choosing authentication mode
- SQL Server security model: connections and users
- SQL Server security model: connections and users
- Security model based on SQL schemas
- Using execution context (EXECUTE AS ...).
- Securing data across databases and server: cross owner ship and linked server
- Proxies and accreditations

Exercise : Creating and testing a security model, creating a stored procedure running in several execution contexts

3) Data encryption and use of certificates
- Architecture of SQL Server encryption
- Creating and managing encryption keys and certificates.
- Encrypting data.
- Reasons for encrypting procedures (WITH ENCRYPTION ...)
- Authenticating the code with certificates
- Encryption best practices

Exercise : Encrypting sensitive columns, signing code with certificates

4) Protection against SQL injection
- SQL injection definition
- The different injection techniques
- Best practices to secure client code and SQL code
- Choosing when and how to use dynamic SQL
- Using SQL proxies

PARTICIPANTS
Anyone in charge of SQL Server security management

PREREQUISITES
Good knowledge of SQL Server administration. Basic knowledge of security and encryption.

TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES
• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES
Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES
Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@ORSYS.fr to review your request and its feasibility.

- Protecting the system against Denial of Service attack (DOS, Denial-of-Service).
Exercise : Testing injection with different types of code and different methods of protection, in the client code and stored procedures

5) Auditing database utilization

- Monitoring access and tracing prohibited behavior (C2, Sarbanes-Oxley Act).
- Monitoring the structure changes
- Monitoring the data changes

Exercise : Implementing a security audit

DATES

REMOTE CLASS
2025 : 10 Mar, 11 Jun, 10 Sep, 01 Dec