**Creating SQL Roles**

What are SQL Roles – Predefined collection of objects and permissions?

Roles allow the dba to manage permissions more efficiently

We first create roles and then assign permissions to roles, and then add logins to the roles

**SQL Server supports four types of roles**

* Fixed database roles - These roles already have pre – defined set of permissions
* User-defined database roles - These roles have their set of permissions defined by the sa
* Fixed server roles – These roles already have pre – defined set of permissions
* User-defined server roles – These roles have their set of permissions defined by the sa

The following shows the fixed database-level roles and their capabilities. These roles exist in all databases.

**Database-level role**

**db\_owner**

Members of the db\_owner fixed database role can perform all configuration and maintenance activities on the database, and can also drop the database.

**db\_securityadmin**

Members of the db\_securityadmin fixed database role can modify role membership and manage permissions (be careful)

**db\_accessadmin**

Members of the db\_accessadmin fixed database role can add or remove access to the database for Windows logins, Windows groups, and SQL Server logins.

**db\_backupoperator**

Members of the db\_backupoperator fixed database role can back up the database.

**db\_ddladmin**

Members of the db\_ddladmin fixed database role can run any Data Definition Language (DDL) command in a database.

**db\_datawriter**

Members of the db\_datawriter fixed database role can add, delete, or change data in all user tables.

**db\_datareader**

Members of the db\_datareader fixed database role can read all data from all user tables.

**db\_denydatawriter**

Members of the db\_denydatawriter fixed database role cannot add, modify, or delete any data in the user tables within a database.

**db\_denydatareader**

Members of the db\_denydatareader fixed database role cannot read any data in the user tables within a database.

**--Demo**

Create a Role that access only two HR tables.

Create database role: HR Tables

Add Securable: Department table, Employee table

Grant Select on both tables

Add both Peter and Robert logins to the database role HR Table

**SQL Server Roles**

The Server Roles page lists all possible roles that can be assigned to the new login.

**bulkadmin**

Members of the bulkadmin fixed server role can run the BULK INSERT statement.

**dbcreator**

Members of the dbcreator fixed server role can create, alter, drop, and restore any database.

**diskadmin**

Members of the diskadmin fixed server role can manage disk files.

**processadmin**

Members of the processadmin fixed server role can terminate processes running in an instance of the Database Engine.

**public**

All SQL Server users, groups, and roles belong to the public fixed server role by default.

**securityadmin**

Members of the securityadmin fixed server role manage logins and their properties. They can GRANT, DENY, and REVOKE server-level permissions. They can also GRANT, DENY, and REVOKE database-level permissions. Additionally, they can reset passwords for SQL Server logins.

**serveradmin**

Members of the serveradmin fixed server role can change server-wide configuration options and shut down the server.

**setupadmin**

Members of the setupadmin fixed server role can add and remove linked servers, and they can execute some system stored procedures.

**Sysadmin (‘God’ like powers – can do anything and everything)**

**Members of the sysadmin fixed server role can perform any activity in the Database Engine.**