Querying SQL Server 2012 – Udemy – 7/8/2022

Explain what RDBMS is

Overview sqlsvr 2012

Diff between diff editions of SQL Server 2012

List Main components of SQL Svr

Work with ssms

Desc db objects

Create db objects using SSMS

2) RDMS – structures and what contains

Relational Database Management System (structure)

Most popular in world 80% of dbs

Key concepts relationship association between 2 diff units of data

RDBMS How data is stored in Tables with pre defined structures, ie Prod (name/price/weight) columns

Coilumns defined in advanced

Can break up a table into multiple and still use together, ie only most commpobnly used in main, where other in other.

Relationship defines a common key column, creationg relationship of rows in each table

Normalization rules

SQL server is the RDBMS product of Microsoft, gone thru many versions. Man components, most important Database Engine, actual RDBMS component

Can run multiple databases, multiple users

Basic RDBMS features but also adv mgmt., security, schalability and tools allowing users and admins to manage, query and advance data and platform easily.

3) SQL Svr 2012. Editions, components and tools

Editions –

Express – completely free can install on PCs and servers and MS grats licence to use in Prod, Is only a scaled down version of Engine, and opt, some mgmt. tools so edition won’t scale up or provide some advanced oportunities

Web – Almost same as Express, sub some signft diff. can use mult CPUs and cores while express only one. Also Express limitation on file size. Web comes with internet facing license allowing to use db for public facing websites and available only to ISPs. And need to obtain permission to use from hosting

Standard – most common. Wishing to store and work with data. DB Engine, but also all other components???

BI - New edition to 2012, meant for where platform used mostly for data analysis and BI intelligence.

Enterprice Developer – Highest end. Everything that is available, what sets apart from standard is high end analy and integrat components, and ability to use clusters to scale up to 1000s users efficiently

Devloper – same as Enterprise, but Licensed for Dev Purposes only and cant be used in Prod Environments. If planning on enhancing Sql Server platform or create solutions based on it. Like

dashboards/reports can use Dev edition vs purchasing a production license for each person in organization.

4) main components of Sql Srv 2012 note although we will talk about top level, there are many components not mentioning here. Many will get covered in diff lessons and coponents.

DB Enging – primary component of platform used by every other component

Provides the RDBMS services for users, and applications that need to store data in relational format.

SSIS – another top level component – used to perform data migration and mgmt. tasks in automated mannor, but we won’t cover in course

SSRS – top level component – allows to create reports/dashboards. Intuitive/power builder tool that will generage – wont discuss here but other courses in cert

SSAS – Data Analysis using OLAP data mining and more. Prime component for Bi where large amts of data can be analyzed quickly to make business decisions.

5) SQL Server tools

SSMS – most important tool In product. Manages all components of SQL Svr.

* Interacting/modifying object
* Changing sv4r config
* Maintain security and more

BIDS – Business Intelligence Development Studio = MS Visual Studio an integrated dev environment IDE – a customized version of the IDE meant to work with SQL Svr Component, like SSIS SSRS and SSAS. Most of the work done is for Business Intelligence – not used in this course.

SQL Profiler – used to view how queries run when executed on SQL Svr DB can profile the run (see what config is being used), view time take and how query is executed among diff tbls in DB. Then can try optimize and see if makes diff.

SQL Config Mgr – tool to configure how diff svcs on back end are executed – start/stop/enable/disable/chg svc acct and configure network protocols and more. In most cases, done after initial install, then not change settings, however good tool to have if want to change settings or start/stop a service

6) SSMS – Intro

Most of stuff learn in course will be done using this tool

Main mgmt. tool of SQL Svr Product in available in all editions, but optional part of install. Not mandatory to install

Used to manage all components of SQL svr. DB Engines, SSRS, SSIS and SSAS. Can manage where einstalled on same machine or different maching Local/Remote. All needed is name of server and component wish to manage. To prevent anyone from installing then connecting need to pass thru authentication process.

SQL Svr allows many authentication platforms, within workgroup or AD network or SQL Svr based auth, where usernames and PW maintained in SQL Svr itsel. Can use any of these to work with a particular machine and specific component. Depending on component. Will see diff options/features enabled. Each comp will have prob unique to that particular one.

7) Manage Databases using SSMS

This cours primarily about working with DBs, need to learn how to use SSMS to manage Engine and all can do with. Process similar similar for other components as well, but with minor changes to properties hav

1st thing when SSMS comes up, need to select which component wish to manage.by default is first set to DB ending. If you chg, ssms remembers and next time it will be default till changed again.

Need to use correct authentication scheme. Either Windows ar SQL Svr authentication (which will only be available if selected in install or by first loggin in with windows authentication). Once system allows, presented with number of nodes in Object Exlorer. Think of as a place where can navigate diff parts of selected component.

When in, can write and execute.

Can add/modify or delete objects directly using gui provided by SSMS tool set

Change properties of objects as well as manage security

8) SSMS Windows

Object explorer pane appears on left side. Shgows different modes, like drives/windows in explorer.

They talk about template explorer don’t get it.

9) Exploring SSMS

At this point he was starting to move around in the app, so I thought I should get SQL Svr installed on my machine. See notes file

Now, after downloanding and installing SQL, back to video.

He starts by opening SSMS, and choosing a db and selecting the authentication type, which is defaulted as windows authentication . There is another Server Authentication option, but I didn’t set it up??

He takes us to options where you can configure other settings

He then opens a query window and just explains and does a select @@version

10) Understanding Database Objects basic objects and their creation

How QSL stores data.

Each db has minimum of 2 files,

Data file (.mdf) can have more than 1 to store using partitioning. Mdf file is one that holds data for a particular server

Log File – (.ldf) stores trans entries for each change. Rcd of actions done to actual data. Log can replay actions and bring data basck to

File groups - are an option by which db files can be placed in diff locations for performance reasons. Contain file group and place on tbls heavily accessed in onw place on faster hard disk, while putting the less accessed in the slower file group.

Database Objects – files contain

Most commonly used structures

Table – rows of data with similar set of attributes stored, with unique nbame and certain properties

Define the columns stored in a table and the types of data stored, ie len, auto incr, store nulls

Key uniquely IDs a row in a table. Recommends allows to query and modify easier

Relationship – two or more tbls, having keys assigned.

11) Demo – Creating DB objects using SSMS