

Administrasi Basis Data

Yoannita



Database Users

- Pengguna database dibedakan berdasarkan keperluan dan cara mereka berinteraksi dengan sistem.
- **Application programmers** – interact with system through DML calls
- **Sophisticated users** – form requests in a database query language
- **Specialized users** – write specialized database applications that do not fit into the traditional data processing framework
- **Naïve users** – invoke one of the permanent application programs that have been written previously
 - E.g. people accessing database over the web, bank tellers, clerical staff

Database Administrator

- Coordinates all the activities of the database system; the database administrator has a good understanding of the enterprise's information resources and needs.
- Database administrator's **duties** include:
 - Schema definition
 - Storage structure and access method definition
 - Schema and physical organization modification
 - Granting user authority to access the database
 - Specifying integrity constraints
 - Acting as liaison with users
 - Monitoring performance and responding to changes in requirements

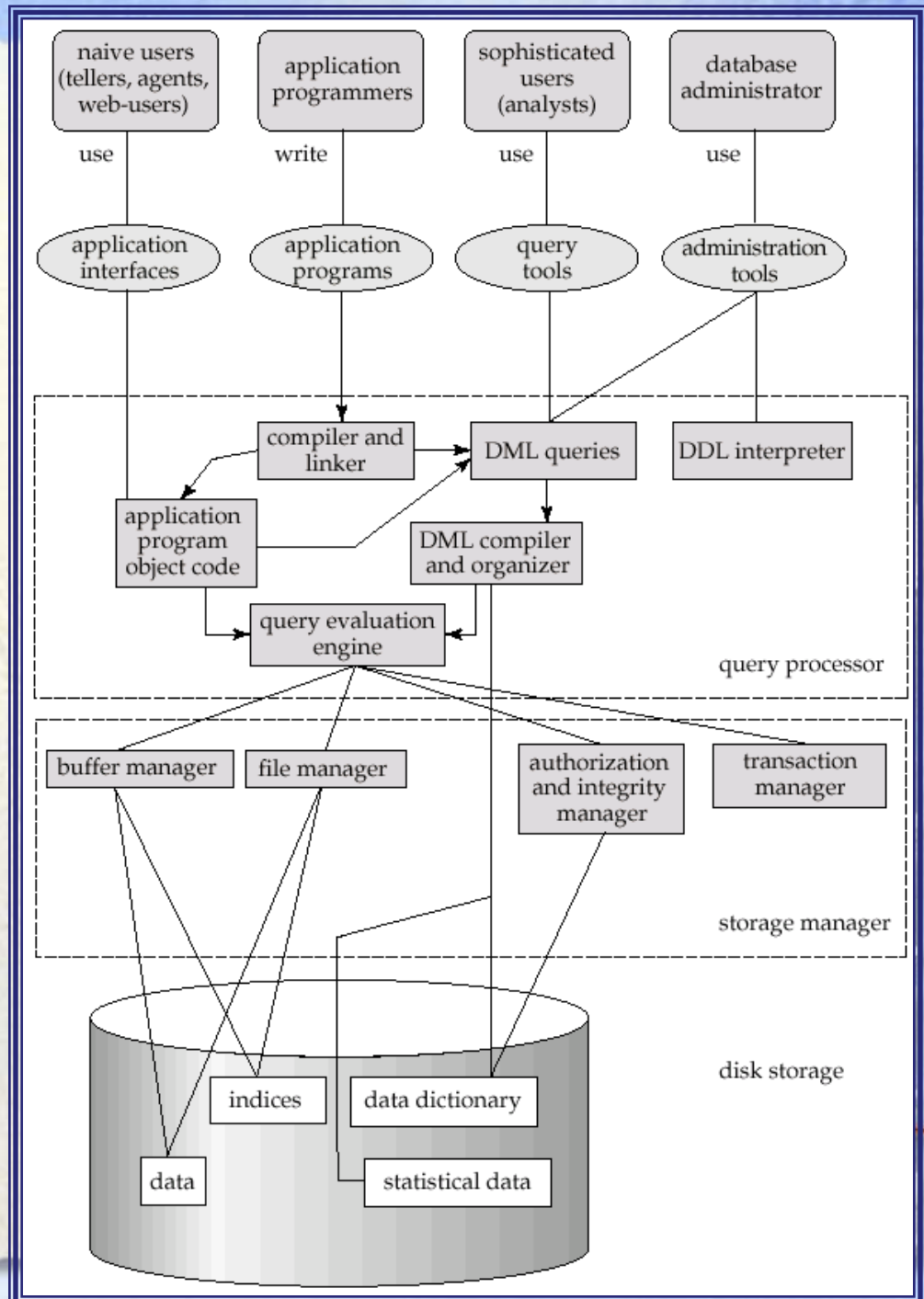
Transaction Management

- A *transaction* is a collection of operations that performs a single logical function in a database application
- Transaction-management component ensures that the database remains in a consistent (correct) state despite system failures (e.g., power failures and operating system crashes) and transaction failures.
- Concurrency-control manager controls the interaction among the concurrent transactions, to ensure the consistency of the database.

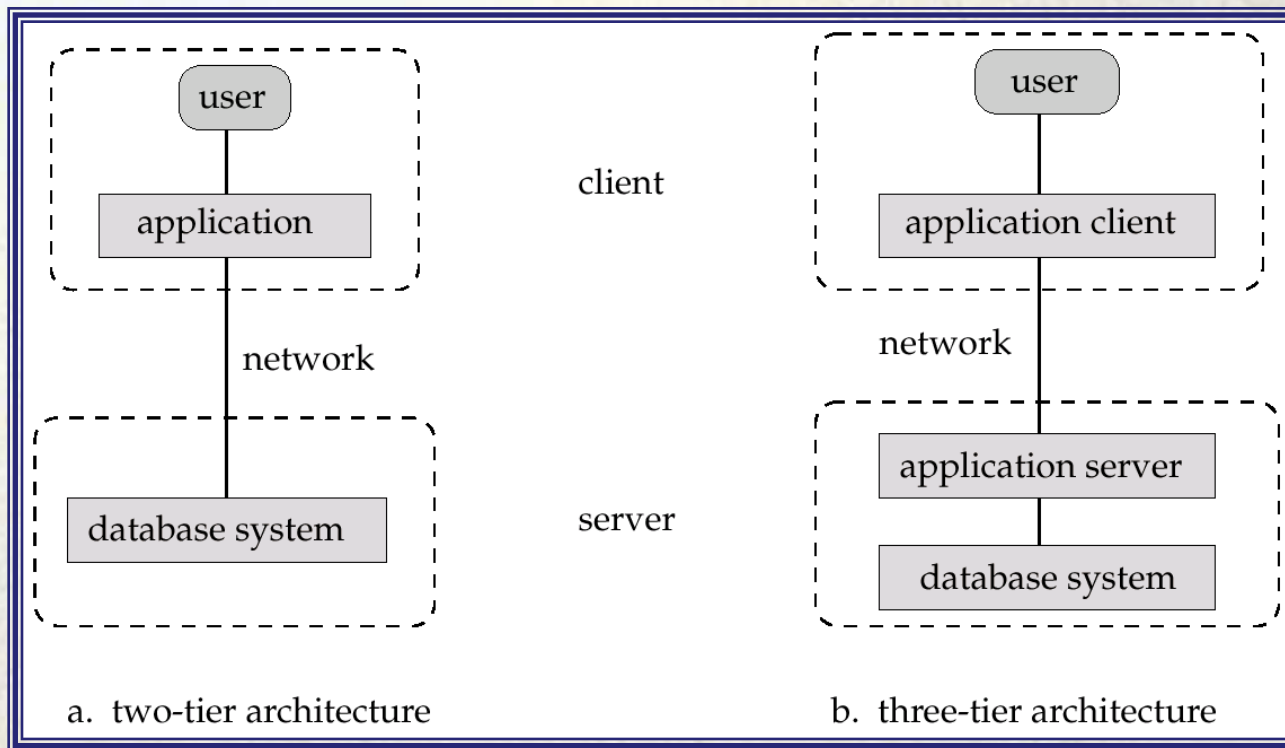
Storage Management

- Storage manager is a program module that provides the interface between the low-level data stored in the database and the application programs and queries submitted to the system.
- The storage manager is responsible to the following tasks:
 - interaction with the file manager
 - efficient storing, retrieving and updating of data

Overall System Structure



Application Architectures



- **Two-tier architecture:** E.g. client programs using ODBC/JDBC to communicate with a database
- **Three-tier architecture:** E.g. web-based applications, and applications built using “middleware”

Bahasa Basis Data : SQL

- SQL (*Structured Query Language*)
- SQL merupakan kombinasi aljabar relasional dan kalkulus relasional.
- Versi aslinya bernama **Sequel**, pertama kali dikembangkan oleh IBM San Jose Research Laboratory dan diimplementasikan pada System R Project (awal 1970-an)
- Bahasa **Sequel** berkembang dan berubah menjadi **SQL** (*Structured Query Language*)

Definisi Administrasi Tradisional

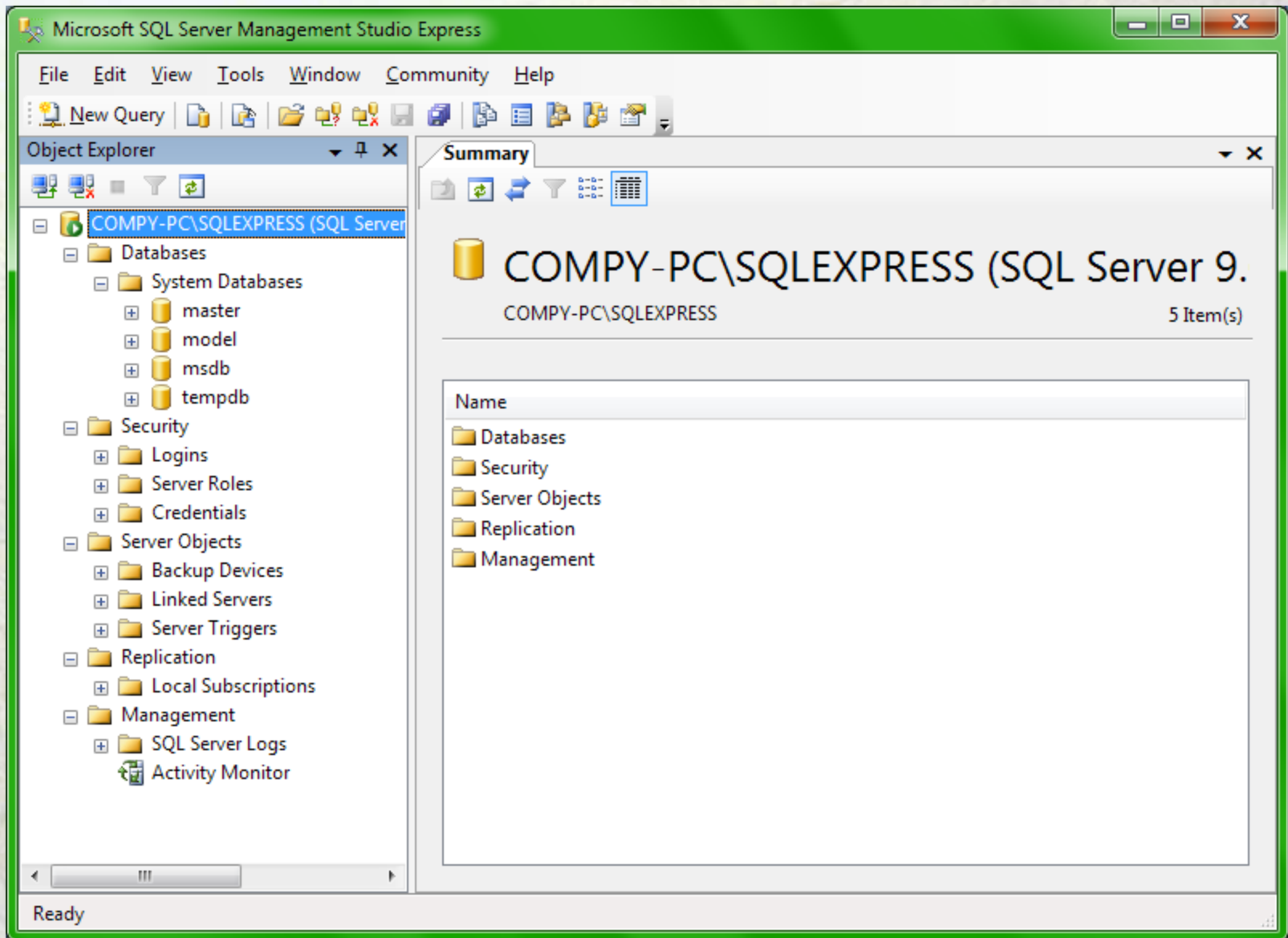
- **Administrasi data (DA):** Fungsi high-level yang bertanggung jawab atas keseluruhan manajemen sumber daya data dalam organisasi, mencakup: pemeliharaan definisi dan standar data organisasi
- **Administrasi basis data (DBA):** Fungsi teknis yang bertanggung jawab atas perancangan basis data fisik dan penanganan masalah teknis seperti: keamanan, kinerja, backup dan recovery.

Fungsi Administrasi Data Tradisional

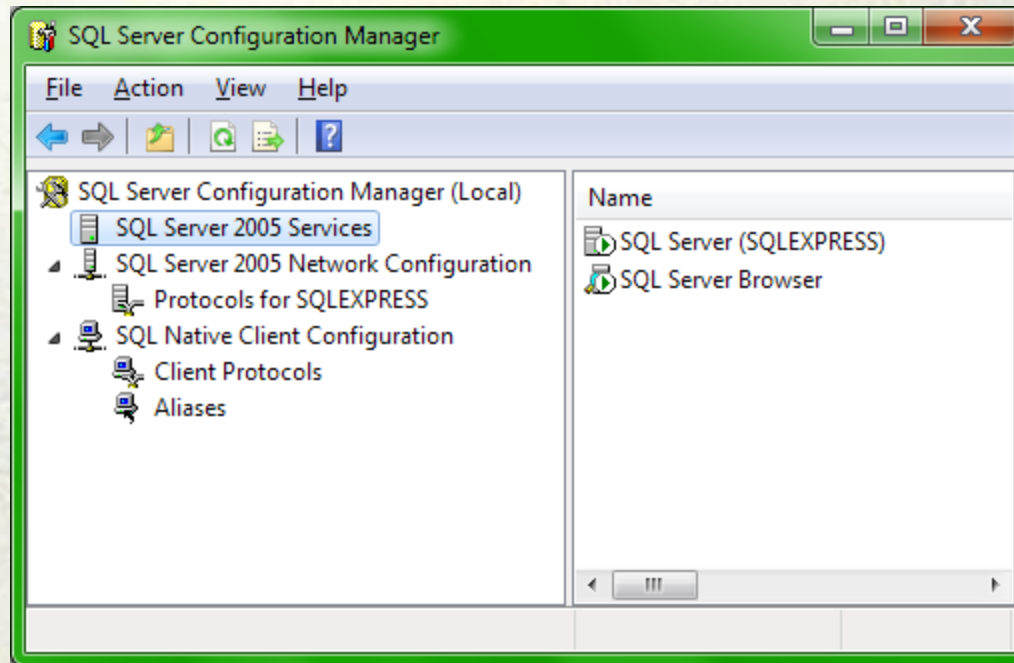
- Kebijakan, prosedur, dan standar data
- Perencanaan
- Penyelesaian konflik kepemilikan data
- Pemasaran internal akan konsep administrasi data
- Mengelola repositori data
- Pemilihan perangkat keras dan lunak
- Instalasi/*upgrade DBMS*
- *Tuning kinerja basis data*
- Meningkatkan kinerja pemrosesan *query*
- Mengelola keamanan, privasi, dan keutuhan data
- *Backup dan recovery*

Perubahan Pandangan akan Administrasi Data

- **Menggabungkan** administrasi data dan basis data ke dalam satu peran
- *Fast-track development* – mengawasi proses pengembangan (*analisis, perancangan, implementasi, dan perawatan*)
- *Procedural DBA* – mengelola mutu trigger dan *stored procedure*
- eDBA – mengelola aplikasi basis data Internet
- PDA DBA – sinkronisasi data dan pengelolaan basis data personal
- *Administrasi data warehouse*



SQL Server Configuration Manager



Minimize SQL Server 2005 Surface Area

SQL Server 2005 improves manageability and security by giving administrators more control over the surface area of local and remote instances of SQL Server 2005. With the SQL Server 2005 Surface Area Configuration tools, you can easily:

- Disable unused services and network protocols for remote connections.
- Disable unused features of SQL Server components.

For new installations, use these tools to enable required features, services, and network protocols that are disabled by default. For upgraded instances, use these tools to identify and disable unused features, services, and protocols.

Users with administrative privileges on Microsoft Windows Vista and later versions will no longer have administrative privileges on this SQL Server installation by default. To explicitly add yourself as a SQL Server administrator, click on the below link:



[Add New Administrator](#)



[Read more about configuring the SQL Server surface area.](#)

Configure Surface Area for localhost [\(change computer\)](#)



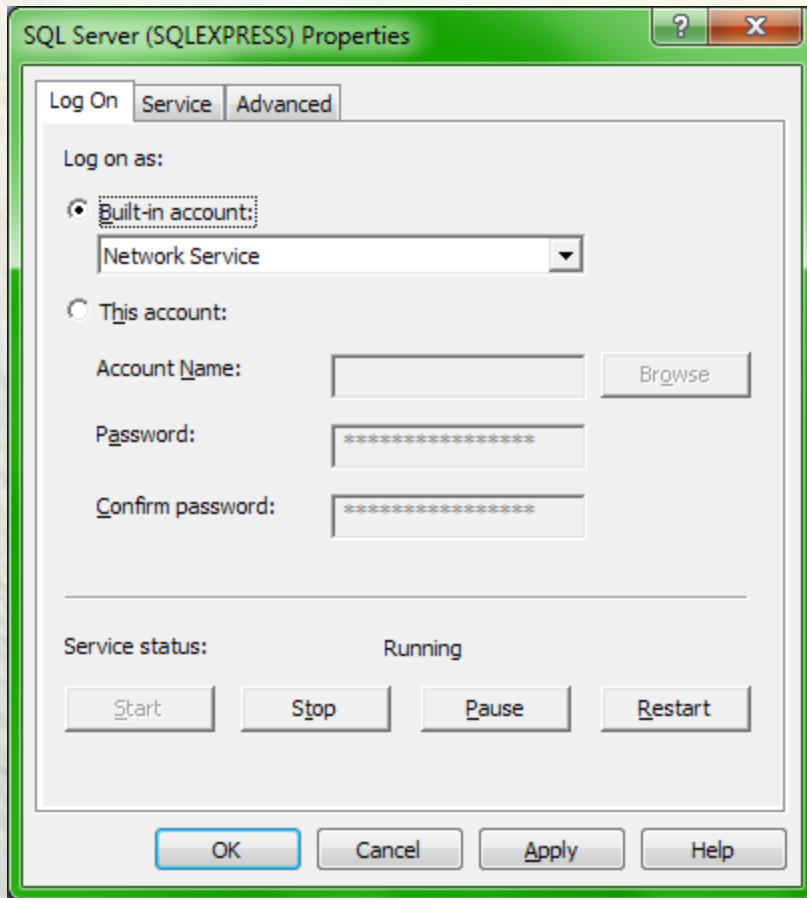
[Surface Area Configuration for Services and Connections](#)



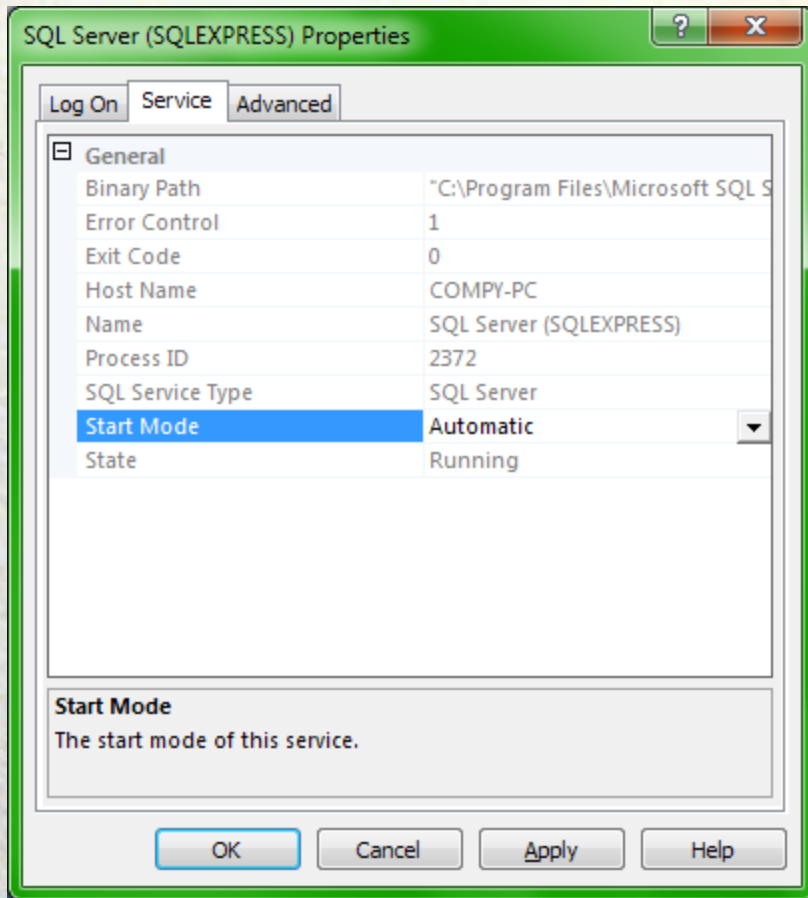
[Surface Area Configuration for Features](#)

SERVER LEVEL MAINTENANCE

- Salah satu bagian dari administrasi sistem adalah penanggulangan bencana.



- Monitoring status SQL Server



- Setting SQL Server untuk mulai secara otomatis saat OS di reboot