

So you don't want to be a DBA...

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We will cover:

- Essentials --No command line needed here (mott)
- What is SQL Server
- How does it come to life
- What are the options you need to know about
- Catchy DBA phrases....

What is it?

- Data, massively.
- Data that relates to other data.
- Programming language to do things with the data
- (Demo)

Who, What, Where...

- Versions:
 - Express, Standard, Enterprise, PDWS
- Who uses it?
 - Fortune 500 companies, .com's, everything in between.
- How big can it get?
 - Terabytes, More than 100 processors, RAM 100GB+

Catchy Phrase #1

- “Let me get back to you on that...”

Types of installations

- Named Instance

| | | | |
|-------------------------|----------------|---------|-----------|
| SQL Server (DEV2) | Provides st... | Started | Automatic |
| SQL Server (DEVEDITION) | Provides st... | Started | Automatic |
| SQL Server (SQLEXPRESS) | Provides st... | Started | Automatic |

SQL Server 2008 Setup

Instance Configuration

Specify the name and instance ID for the SQL Server instance.

Setup Support Rules
Installation Type
Product Key
License Terms
Feature Selection
Instance Configuration
Disk Space Requirements
Server Configuration
Database Engine Configuration
Error and Usage Reporting
Installation Rules
Ready to Install
Installation Progress
Complete

Default instance
 Named instance:

Instance ID:

Instance root directory: ...

SQL Server directory:

Installed instances:

| Instance | Features | Edition | Version | Instance ID |
|------------|---------------------|-----------|--------------|--------------------|
| DEV2 | SQLEngine,SQLEng... | Developer | 10.0.1600.22 | MSSQL10.DEV2,MS... |
| SQLEXPRESS | SQLEngine,SQLEng... | Express | 10.1.2531.0 | MSSQL10.SQLEXP... |
| DEVEDITION | SQLEngine,SQLEng... | Developer | 10.1.2531.0 | MSSQL10.DEVEDIT... |

< Back Next > Cancel Help

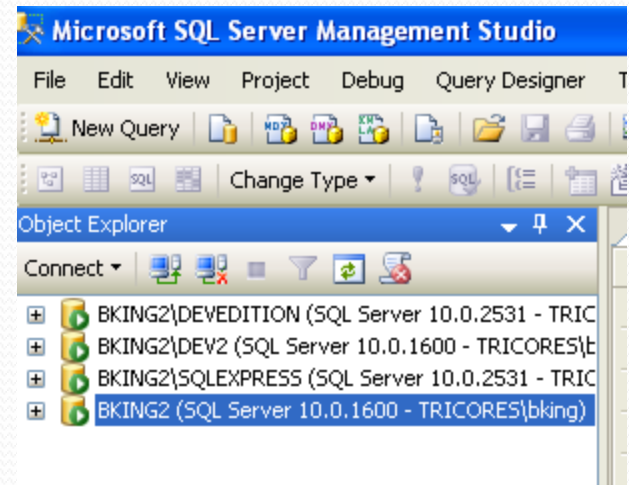
Types of installations

- Named Instance
 - MyServer\InstanceName

| | | | |
|-------------------------|----------------|---------|-----------|
| SQL Server (DEV2) | Provides st... | Started | Automatic |
| SQL Server (DEVEDITION) | Provides st... | Started | Automatic |
| SQL Server (SQLEXPRESS) | Provides st... | Started | Automatic |

- Default Instance
 - Connect by Server Name Only
 - Listed as MSSQLSERVER in CTRL PNL

| |
|----------------------------|
| SQL Server (DEV2) |
| SQL Server (DEVEDITION) |
| SQL Server (MSSQLSERVER) ← |
| SQL Server (SQLEXPRESS) |
| SQL Server (DEV2) |



What needs to be installed

- Install:
 - SQL Server engine
 - Full Text Search
 - Replication
 - Business Intelligence Development Studio
 - Integration Services
 - SQL Books Online
 - Management Tools “Complete”

Basic Services

- MSSQLSERVER --The DB Engine
- SQL Agent -- Schedules SQL Jobs
- SQL Browser -- Used for name resolution
- SSIS (SQL Server Integration Services)
 - Replaced DTS.
 - Runs packages that move data, etc.
- Others
 - SSAS --Analysis Services
 - SQL VSS Writer

Configuration manager

- Use it to start / stop SQL
- Change passwords
- **DO NOT USE CONTROL PANEL SERVICES**

A little under the hood...

- Master Database
 - First Database started
 - Contains login information for the entire instance (**not user dbs**)
 - Contains info about ALL the other databases
- Hidden DB → MSSQLSystemResource
 - Second Database started
 - Just a file
- MSDB Database
 - **Contains scheduled jobs and History**
 - Contains alert information
 - Fourth DB Started

A Little More

- Model database
 - A model for all new databases created.
 - Create something here, you'll find it in the new DB.
- Tempdb
 - Used for temporary objects (Demo)
 - Used for sorting data
 - (Usually needs to be pretty big)
 - CANNOT be backed up

Startup

- Master
- MSSQLSystemResource
- Model
- MSDB
- Tempdb
- ALL the user databases

The flow of data

- SQL Server writes to the log file first (.LDF)
 - All transactions have something written to the log file first.
- Writes to the Data file (.MDF)
 - SQL Server determines when to write to the data file.
 - (Demo)

Catchy Phrase #2

- “Ohhh, THAT doesn’t sound good....”

Server Crash

- SQL Recovery occurs at boot time
- Very resilient
- Plays the logs forward to recover transactions in transit

SQL Server error logs

- Logs for SQL and the SQL Agent
 - Text files on the file system
- Can also find events in the Windows event logs

If it's not obvious....

- Backup and Recovery are the most important things you will ever do.
 - Make sure you know this stuff
 - Test, test, test.

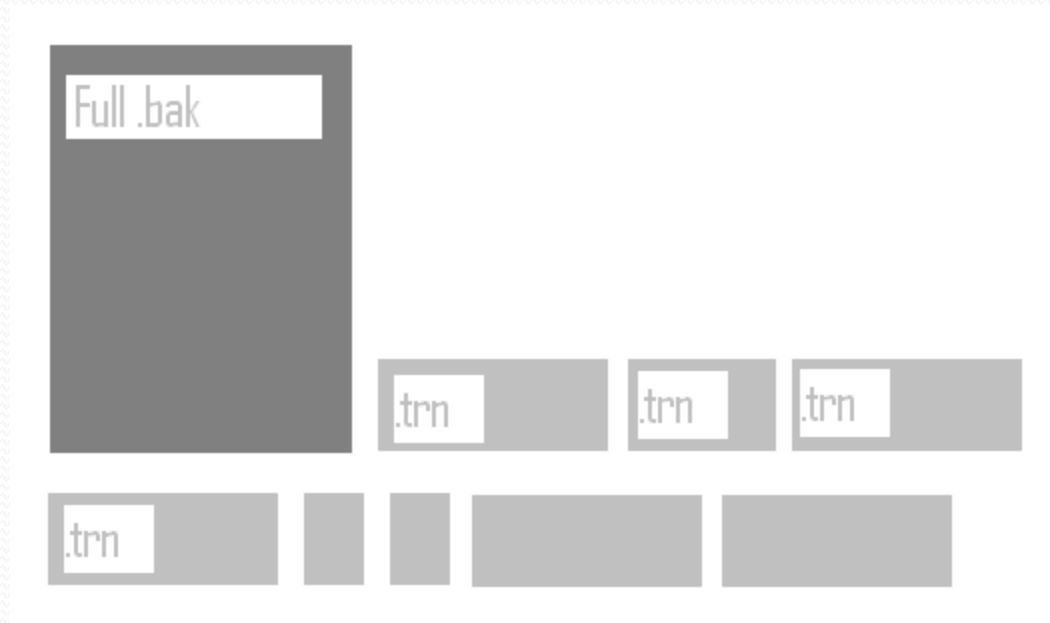
Types of backups

- Full backups
 - All the data in the database.
 - Includes all the data and all the programmable objects
- Differential—
 - Exactly what they say.
 - Don't use them.

Types of backups

- Transaction logs.
 - Records all the changes to the data since the last backup.
 - Can only be restored with a Full backup
 - Must be restored in sequence
 - Cannot be missing any files
 - Database must be in Full recovery model to work.

Full, log, log, log, log, Full....



Catchy phrase #3

- “Maybe we should take a backup....”

Next steps

- Backups
 - Restoring user databases to the same server
 - Restoring databases to a different server
 - You'll need to learn about orphaned users
 - You need to learn how to move logins
 - Restoring ALL databases to a new server
 - Master, Model, MSDB, User databases

Maintenance Plans

- Check database integrity
- Rebuild (not reorganize) indexes
- Backup transaction logs every 15 mins. To 1 hour.
- Full backup daily
- Delete old backup files (.bak and .trn)

Configuration Options

- Server:
 - AWE enabled for 32 bit
 - Max Memory
 - Fill factor (I set mine to 80)
- Database
 - Full or Simple recovery model
 - AutoGrow

Things that look tempting (don't say I didn't warn you)

- Boost SQL Server priority
- Processor affinity
- Windows only authentication
- Resource governor
- Policy management
- Auditing all logins

Thanks!

- Burt_king@yahoo.com
- Please wake up the person next to you.