

Tuning Microsoft SQL Server for SharePoint

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Nashville SQL Server User Group November 20th 2015

Work Like a Network

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#SPHelp


Yammer Networks

- SPYam (see me for an invite)
- Office 365 IT Pro



About me



- Collaboration & SharePoint Practice leader at InfoWorks Inc.
- @DanielGlenn 
- KnowSharePoint.com
- User Group leader x2
- Nashville SharePoint & SQL Saturdays





#480 | NASHVILLE 2016

January 16

<http://SQLSaturday.com/480/>

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About you

- Database administrators
- Business users
- Developers
- SharePoint administrators

SharePoint experience?

Agenda

- SharePoint install demo
- What is SharePoint?
- SharePoint Databases
- SQL Configuration
- SQL Server Maintenance
- SharePoint Configuration

SharePoint Install Demo

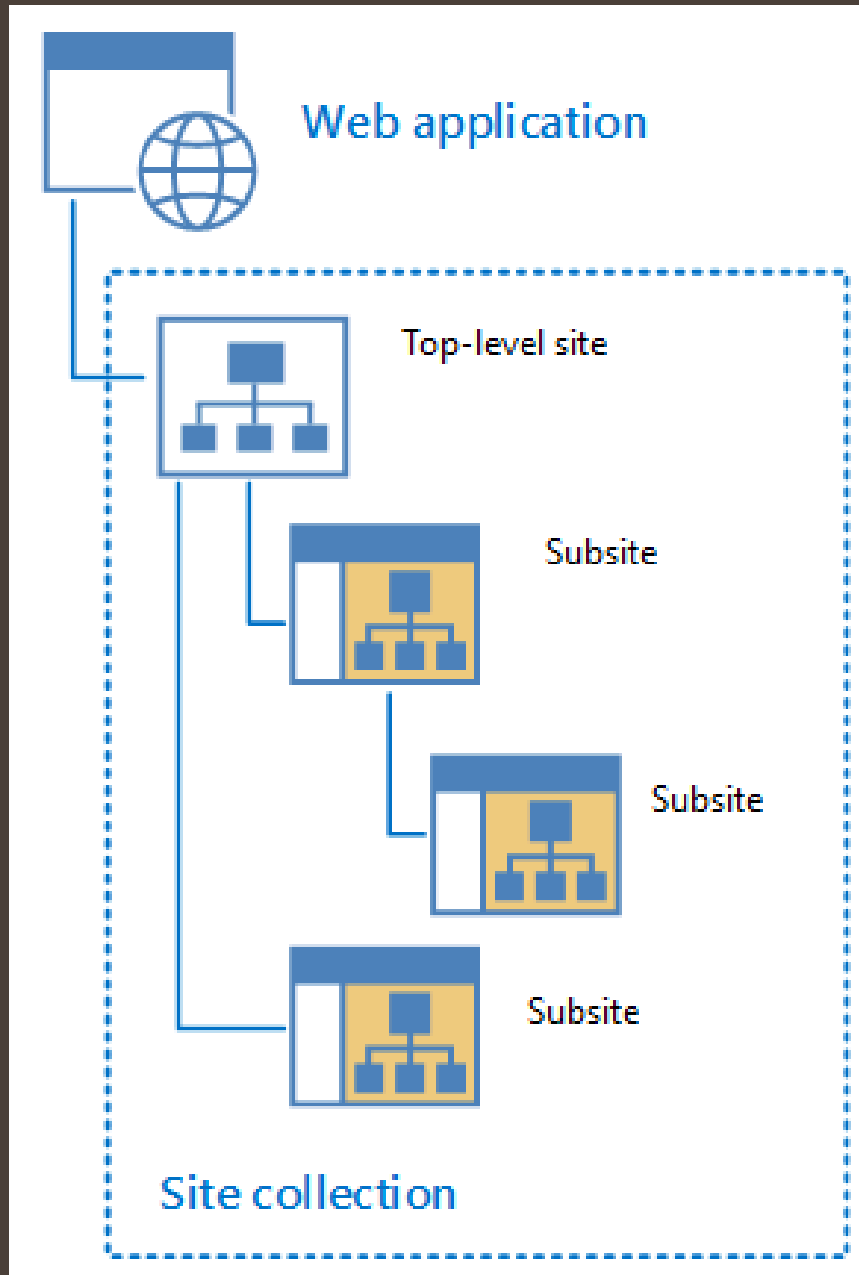


What is SharePoint?

SharePoint

- SharePoint is a valuable tool that delivers enterprise document management, business intelligence, web content management, search, and social capabilities
- There are different versions and deployment options
 - Foundation, Standard, Enterprise; on-premises, cloud, hybrid
- MS SQL is SharePoint's data store for almost all components
- What is a 'SharePoint farm?'
- A Site Collection?

SharePoint





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SharePoint Databases

SharePoint Databases

- For a full install of SharePoint 2016 Enterprise on-premises, there are over 20 databases
- Types:
 - Configuration
 - Central Admin Content
 - Content
 - Service Apps (some have more than one DB)
- One content database per Site Collection
- Content databases can have many site collections, but a large (>100GB) site collection should have a dedicated database

SharePoint Databases

- + AppMng_Service_DB_90f674e3646f4d85aab0c23b9c38e860
- + Bdc_Service_DB_bfc5c08e698a4f25ac95486e33506850
- + Managed Metadata Service_564c0640e56147959f728dc6db8e6b0e
- + PerformancePoint Service Application_1ed416f7799246859f145a4f645cfe67
- + Search_Service_Application_AnalyticsReportingStoreDB_1b6451de073449558b88f52c53ea41ad
- + Search_Service_Application_CrawlStoreDB_cd61ed2823f5409295d00336ffee7056
- + Search_Service_Application_DB_95259af374ba4796a816657039eb425f
- + Search_Service_Application_LinksStoreDB_fb244f8322a749a29bf6c21e3fa5c377
- + Secure_Store_Service_DB_12cacd1aadd54681a474dc9be6c814d3
- + SP13_Admin_Config
- + SP13_Config
- + SP13_MySite_Content
- + StateService_674490b7df264eee83e8ff6512a834ef
- + TranslationService_0f810e79221d4b5db15d90b07a98c8ff
- + WordAutomationServices_f4c1c1a13c3c49ed9150803919c1d82d

SharePoint Configuration

SharePoint Configuration

- Dedicated SQL instance
 - Watch those resources!
- DNS CNAME or SQL Alias for use with SharePoint
 - Before SharePoint install
- Keep your **collaboration** site content databases
< 200GB
- Monitor SharePoint content database I/O

SQL Configuration

SQL Configuration

- New Instance
 - Not on the SharePoint server!
- Latin1_General_CI_AS_KS_WS
- File placement
- Model database
 - Increase initial size, and set to do MB growth not %
 - Full recovery
- Tempdb
 - Data files = # of processor cores*
 - Simple recovery
- Server memory (RAM) usage
- Max Degree of Parallelism

SQL Configuration

Select a page

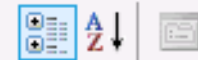
- General
- Memory
- Processors
- Security
- Connections
- Database Settings
- Advanced
- Permissions

Connection

Server:
dc1

Connection:
SQLSAT\Administrator

Script Help



FILESTREAM	
FILESTREAM Access Level	Disabled
FILESTREAM Share Name	MSSQLSERVER
Miscellaneous	
Allow Triggers to Fire Others	True
Blocked Process Threshold	0
Cursor Threshold	-1
Default Full-Text Language	1033
Default Language	English
Full-Text Upgrade Option	Import
Max Text Replication Size	65536
Optimize for Ad hoc Workloads	False
Scan for Startup Procs	False
Two Digit Year Cutoff	2049
Network	
Network Packet Size	4096
Remote Login Timeout	10
Parallelism	
Cost Threshold for Parallelism	5
Locks	0
Max Degree of Parallelism	1
Query Wait	0

SQL Configuration

Permissions for SharePoint administrators & service accounts

- SharePoint admins themselves do NOT need permissions within SQL
- The **service account** used to install SharePoint needs:
 - **securityadmin** and **dbcreator** SQL Server roles during setup and configuration

SQL Configuration

Permissions for SharePoint administrators & service accounts (cont)

- The service account that is the Farm service account will be provisioned automatically during farm creation to have:
 - **dbcreator** and **securityadmin** fixed server roles.
 - It will also be the **db_owner** for all SharePoint databases.
- Other service accounts will be added to new roles on SharePoint databases

To learn more: [http://technet.microsoft.com/en-us/library/cc678863\(v=office.15\).aspx](http://technet.microsoft.com/en-us/library/cc678863(v=office.15).aspx)

SQL Server Maintenance

SQL Server Maintenance

- Database growth
 - Plan and pre-grow
 - Quotas, # site collections per database
- Low vs. High I/O databases
 - Lower I/O databases can be larger without performance issues
- Backups
 - Location
 - Test them!
- Simple vs. full recovery

SQL Server Maintenance

- KB841057 (et al.) For SharePoint production databases, don't:
 - Open
 - Edit
 - Query
 - Etc.
- Fragmentation
 - Database
 - Tables
 - Indexes
 - File system

SQL Server Maintenance

Examples of unsupported database changes include, but are not limited to, the following:

- Adding database triggers
- Adding new indexes or changing existing indexes within tables
- Adding, changing, or deleting any primary or foreign key relationships
- Changing or deleting existing stored procedures
- Calling existing stored procedures directly, except as described in the [SharePoint Protocols documentation](#)
- Adding new stored procedures
- Adding, changing, or deleting any data in any table of any of the databases for the products that are listed in the "Applies to" section
- Adding, changing, or deleting any columns in any table of any of the databases for the products that are listed in the "Applies to" section
- Making any modification to the database schema
- Adding tables to any of the databases for the products that are listed in the "Applies to" section
- Changing the database collation
- Running DBCC_CHECKDB WITH REPAIR_ALLOW_DATA_LOSS (However, running DBCC_CHECKDB WITH REPAIR_FAST and REPAIR_REBUILD is supported, as these commands only update the indexes of the associated database.)
- Enabling SQL Server change data capture (CDC)
- Enabling SQL Server transactional replication
- Enabling SQL Server merge replication

Summary

Best Practices & Summary

- Use SQL Server best practice guidance
- Use RAID disks and spread data and trans log files on multiple physical drives
- Auto growth and 'shrinking' causes fragmentation
- Defragment SQL drives that have SharePoint content databases
- Backup (with multiple copies) and test your backups
- Dedicated SQL Server or SQL Instance
- Create SQL Server alias or CNAME
- Content databases < ~200GB
- Monitor SharePoint content database I/O
- MaxDOP = 1
- Set dbcreator and securityadmin for SharePoint install account only

SharePoint Install Demo

Thank you!

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Nashbi.sqlpass.org