SQL Azure for DBA's

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Whois

• Mark S. Rasmussen
  – Tech Lead at iPaper ApS
  – Half DBA half Dev (booo)

• Martin D. Schmidt
  – SQL Server rockstar at Miracle A/S
According To Microsoft...

SQL Azure Database

Highly scaled out relational database as a service

Relational database service
- SQL Server technology foundation
- Highly symmetrical
- Highly scaled

Database "as a Service" – beyond hosting

Customer Value Props
- Self-provisioning and capacity on demand
- Symmetry w/ on-premises database platform
- Automatic high-availability and fault-tolerance
- Automated DB maintenance (infrastructure)
- Simple, flexible pricing – "pay as you grow"
Demo
Service License Agreement

- 99.9% Uptime guarantee
  - 5 minute interval
  - Unavailable if fail to connect within 30 secs or basic IO ops fail

- 10 hours of scheduled downtime (5 day warning) not included in SLA

- This SLA and any applicable Service Levels do not apply to any performance or availability issues:
  - That resulted from actions or inactions of Customer or third parties;
Pricing

- 1GB = $9.99/m
- 10GB = $99.99/m
- 50GB = $499.95/m (?)
- $0.10 ingress, $0.15 egress (.30/.45 for Asia)
- sys.bandwidth_usage, sys.database_usage
The Black Box

• Promises “unlimited” scaling as long as you partition your data

• No performance counters

• No system information

• Connection may be terminated:
  – Excessive resource usage
  – Long-running queries
  – Long-running transactions
Datatypes

• Fully supports all standard datatypes

• Except:
  – Geometry
  – Geography
  – Hierarchyid
Various Limitations

• No [USE] (command)
• No GUI
• No Intellisense
• No cross-db querying
• No DB level collation
• No extended stored procedures
• No heap tables
• No index options
DB Size Limitations

- 1GB, 10GB, 50GB (June ’10)
- Fluffy limit

![Database Size Limitations Table]

**Messages**

Msg 40544, Level 20, State 5, Line 1
The database has reached its size quota. Partition or delete data, drop indexes, or consult the documentation for possible resolutions. Code: 524289

Msg 0, Level 20, State 0, Line 0
A severe error occurred on the current command. The results, if any, should be discarded.

*[Miracle OpenWorld 2010]*
When Sky’s The Limit and we hit it...

- Rebuild indexes
  - Oh, but we can’t
- Rebuild indexes with SORT_IN_TEMPDB
  - Oh, but we can’t
When Sky’s The Limit and we hit it...

- Drop indexes

- So what can we do?
  - Export data, recreate table, import data
  - Delete data

- Don’t come near the limit!
Demo
Backup / Restore

• Backup / Restore operations not supported
• Attach / Detach not supported
• Who needs backup anyway!

• Ways to get a ”backup” of your data:
  – MS SQL Azure Data Sync
  – SSIS
  – Bcp.exe utility
  – Red gate sync tools

• No snapshot capabilities
  – Even larger issue if we start sharding
Wait Stats

• 100% Keep guessing
  – My DB = Blackbox

• No waits stats available
  – No sys.dm_os_wait_stats
  – No Extended Events

• Wait stats is not that important anyway
Index Stats

• No index usage info available
  – Index DMV’s not supported
    • sys.dm_db_index_usage_stats
    • sys.dm_db_index_physical_stats
    • sys.dm_db_index_operational_stats
    • sys.dm_db_missing_index_group_stats
    • sys.dm_db_missing_index_groups
    • sys.dm_db_missing_index_details

• www.wedonotuseindexes.com
DBCC

- NO DBCC support
  - DBCC CheckDB
  - DBCC Loginfo
  - DBCC sqlperf('sys.dm_os_wait_stats', clear)
  - DBCC checkident
  - DBCC dropcleanbuffers
  - DBCC freeproccache
  - DBCC TRACEON / TRACEROFF
Profiling

- Server tracing not supported
- No default trace running
- No access to sys.traces

- Only way to catch statements, is to sample sys.dm_exec_requests every now and then.
Query Optimization

• sys.dm_exec_query_stats and sys.dm_exec_query_plan are both available!

• SET STATISTICS IO/TIME available!

• Show execution plan

• Still missing index statistics though
Demo
Latency

- Min Latency
- Max Latency
- Avg Latency

- Local
- Windows Azure
Latency

Windows Azure

M5
Latency

Local

M M X
"AutoShrink"

- No need to manually shrink database
- Does not cause fragmentation?
- Billed by used number of pages, not datafile
Fragmentation

- Tough to detect without dm_db_index_physical_stats
- May be able to guesstimate internal fragmentation
  - External fragmentation
    - Hope Azure takes care
    - Schedule our own rebuilds
- Affects performance, size and economy
Account Security

• [Drop Server] button protected by your Windows Live ID password

• Really needs stronger authentication options
  – Certificate
  – Two-factor authentication
Why Use SQL Azure?
Thank you!
For attending this session

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