

SQL Azure for DBA's



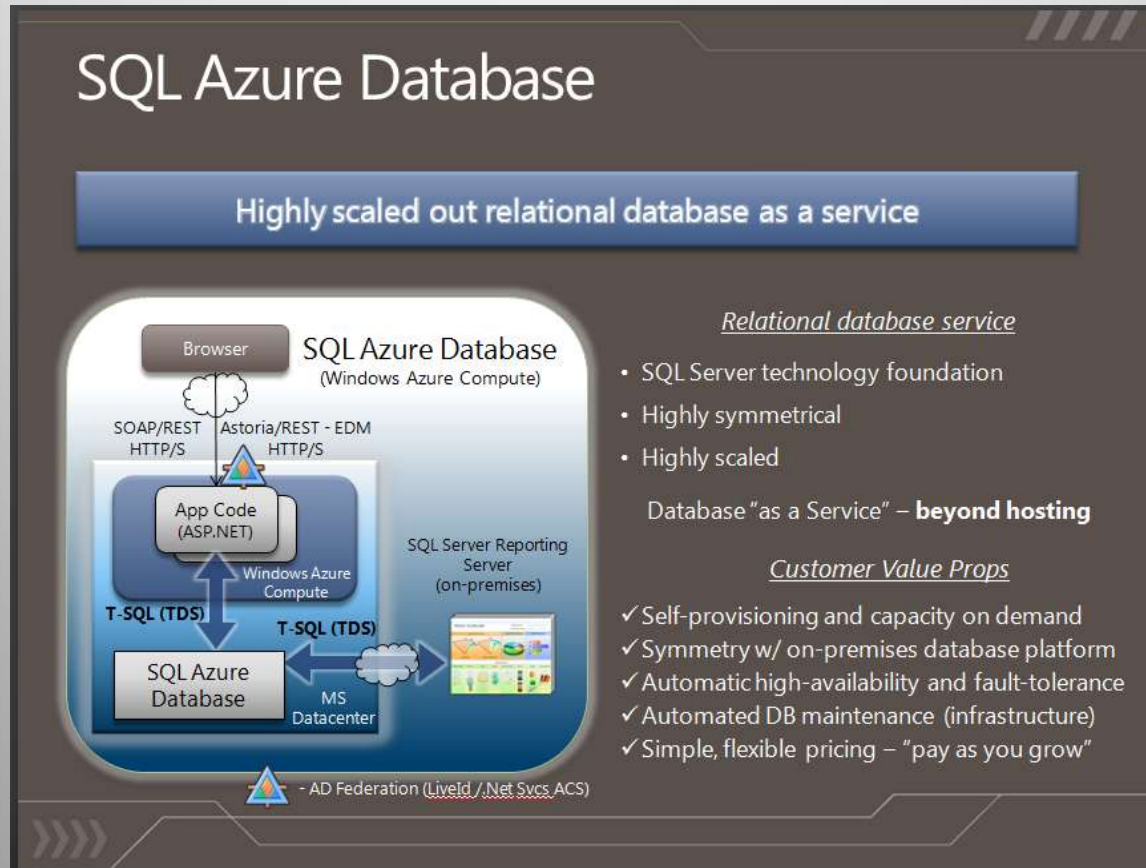
Miracle OpenWorld 2010

Mark S. Rasmussen - iPaper
Martin D. Schmidt – Miracle A/S

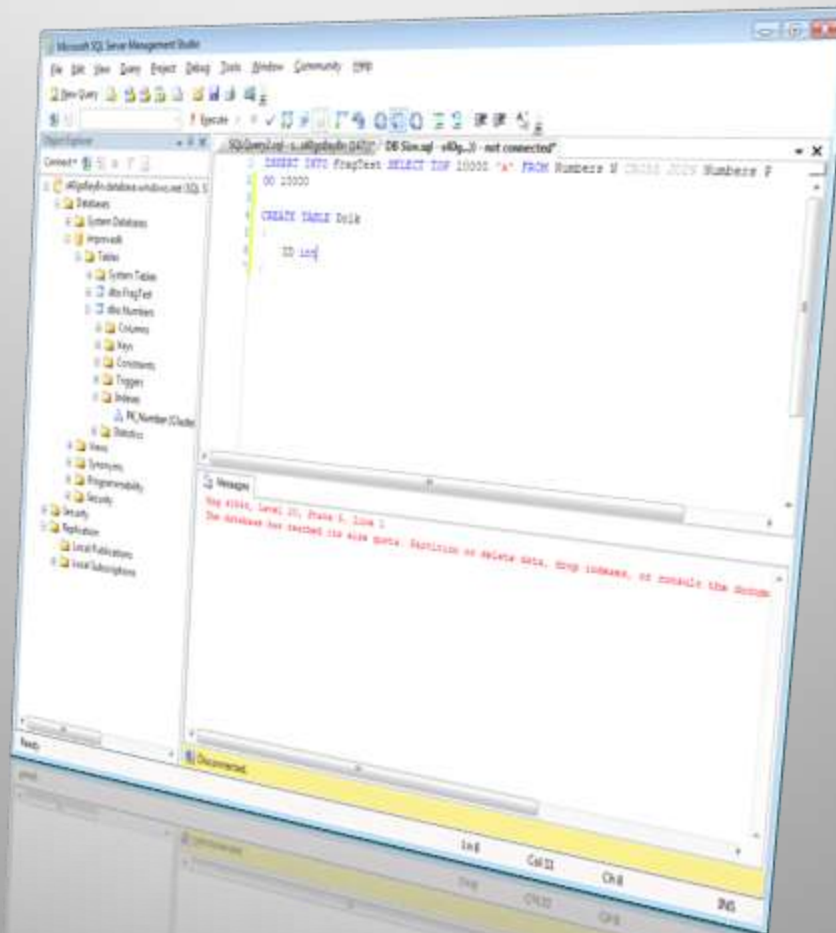
Whois

- 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...



Demo



mow

M M X

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
 - Hierarchid

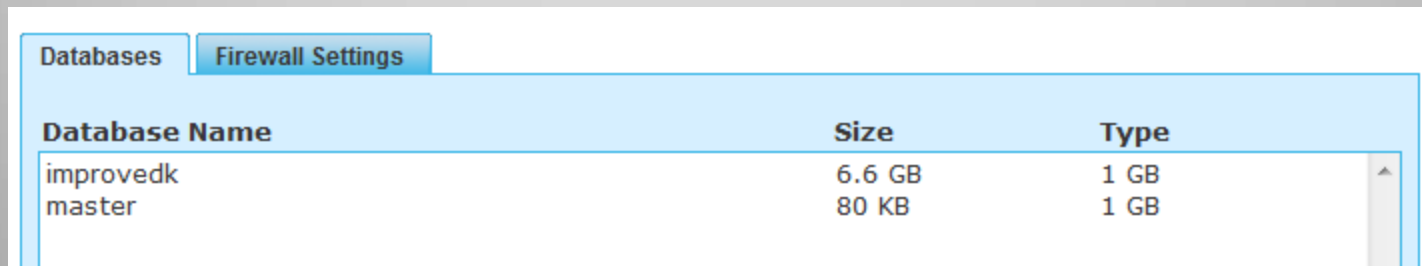
Various Limitations

- 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



The screenshot shows a web-based interface with two tabs: 'Databases' and 'Firewall Settings'. The 'Databases' tab is active, displaying a table with three columns: 'Database Name', 'Size', and 'Type'. The table contains two rows of data.

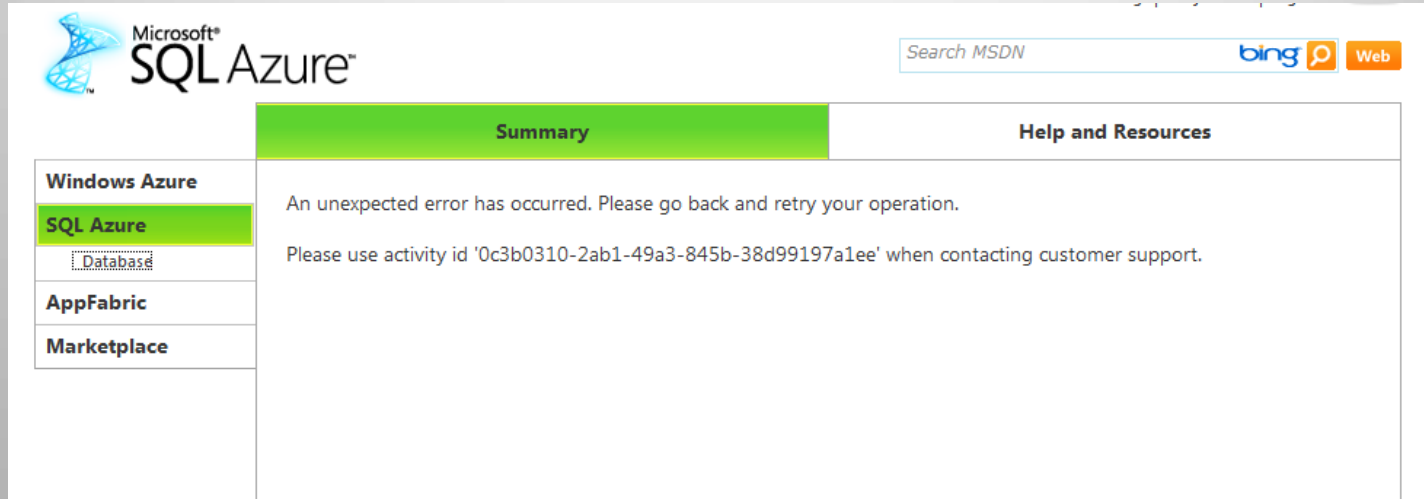
Database Name	Size	Type
improvedk	6.6 GB	1 GB
master	80 KB	1 GB

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.
```



When Sky's The Limit and we hit it...



The screenshot shows the Microsoft SQL Azure website. At the top left is the Microsoft SQL Azure logo. To the right is a search bar labeled "Search MSDN" with a Bing logo and a "Web" button. Below the search bar is a navigation menu with "Summary" (highlighted in green) and "Help and Resources". On the left side, there is a vertical menu with "Windows Azure", "SQL Azure" (highlighted in green), "Database", "AppFabric", and "Marketplace". The main content area displays an error message: "An unexpected error has occurred. Please go back and retry your operation." Below this, it says: "Please use activity id '0c3b0310-2ab1-49a3-845b-38d99197a1ee' when contacting customer support."

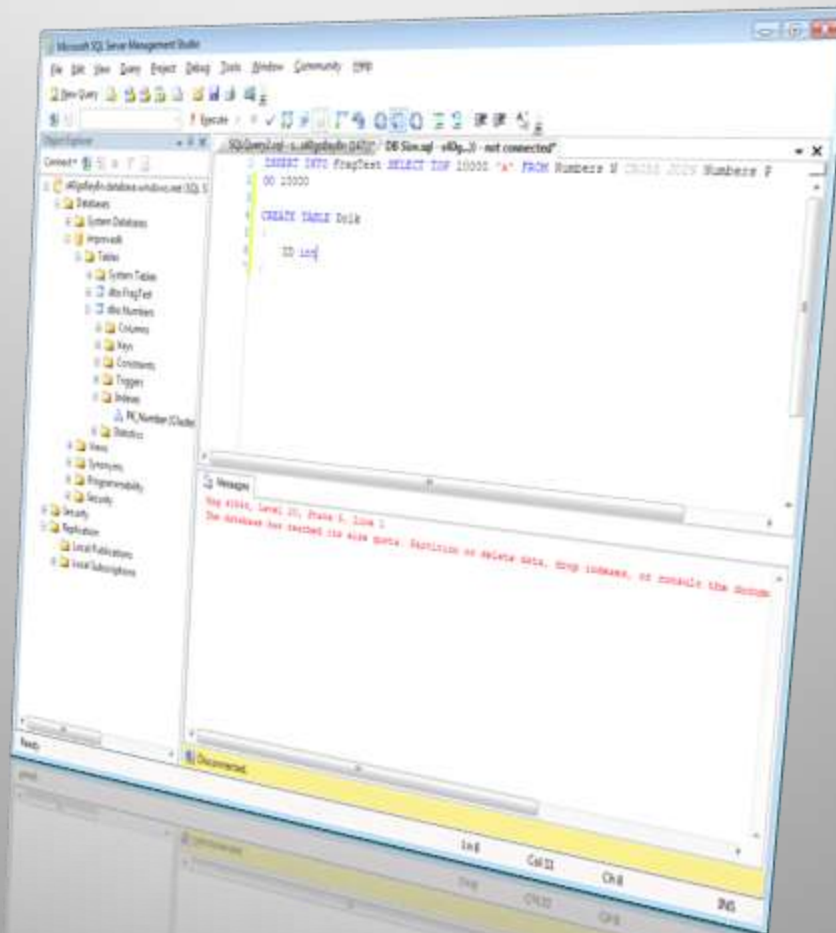
- Rebuild indexes
 - Oh, but we can't
- Rebuild indexes with SORT_IN_TEMPDB
 - Oh, but we can't

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



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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 / TRACEOFF

Profiling

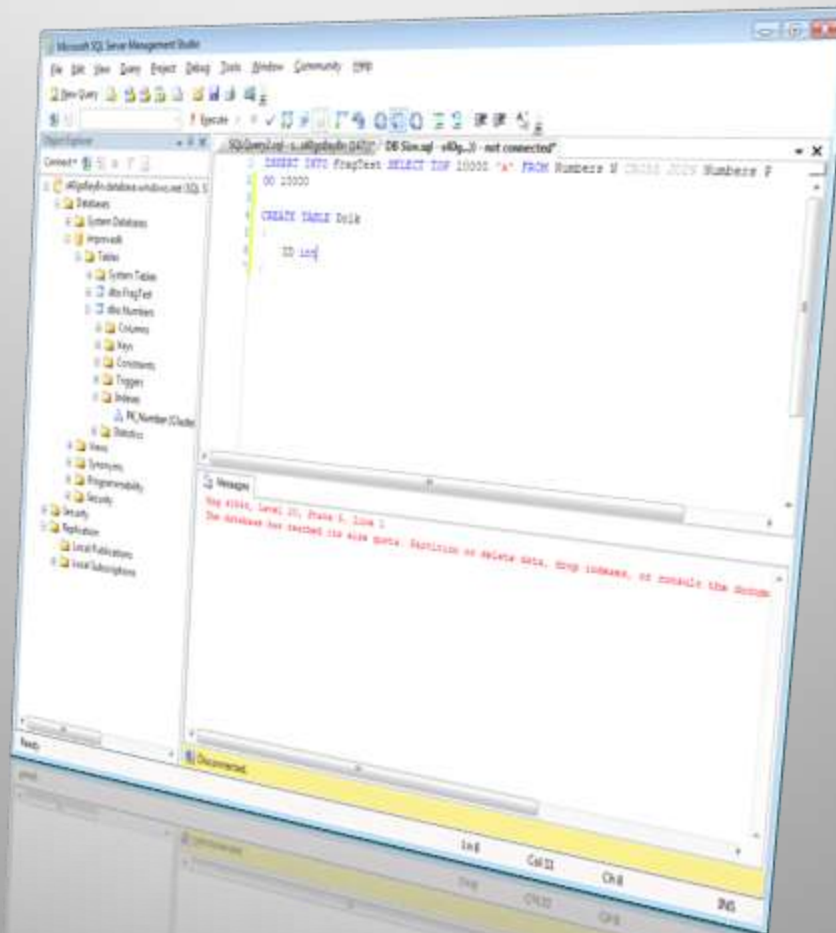
- Server tracing not supported
- No default trace running
- No access to `sys.traces`

- 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

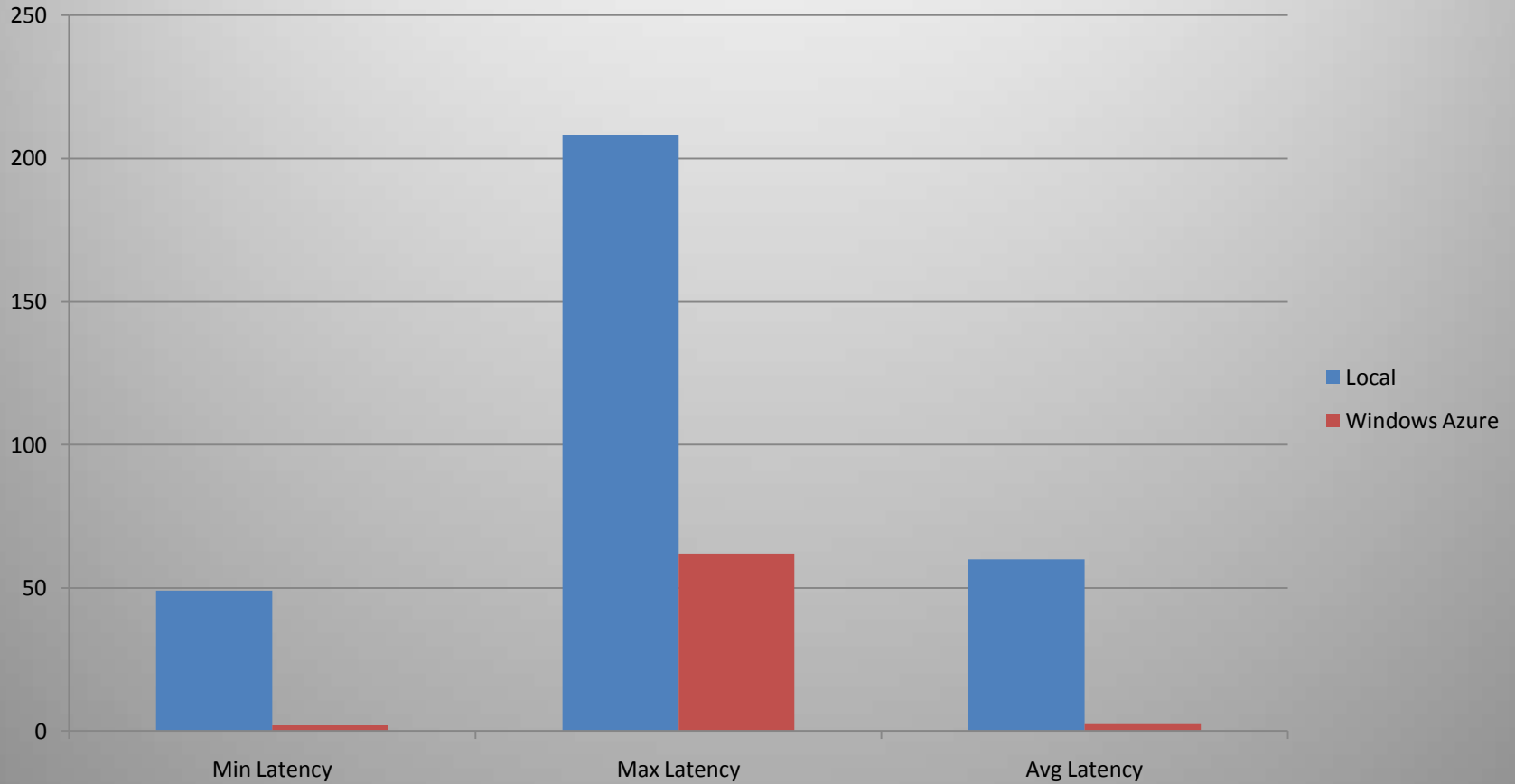
Demo



mow

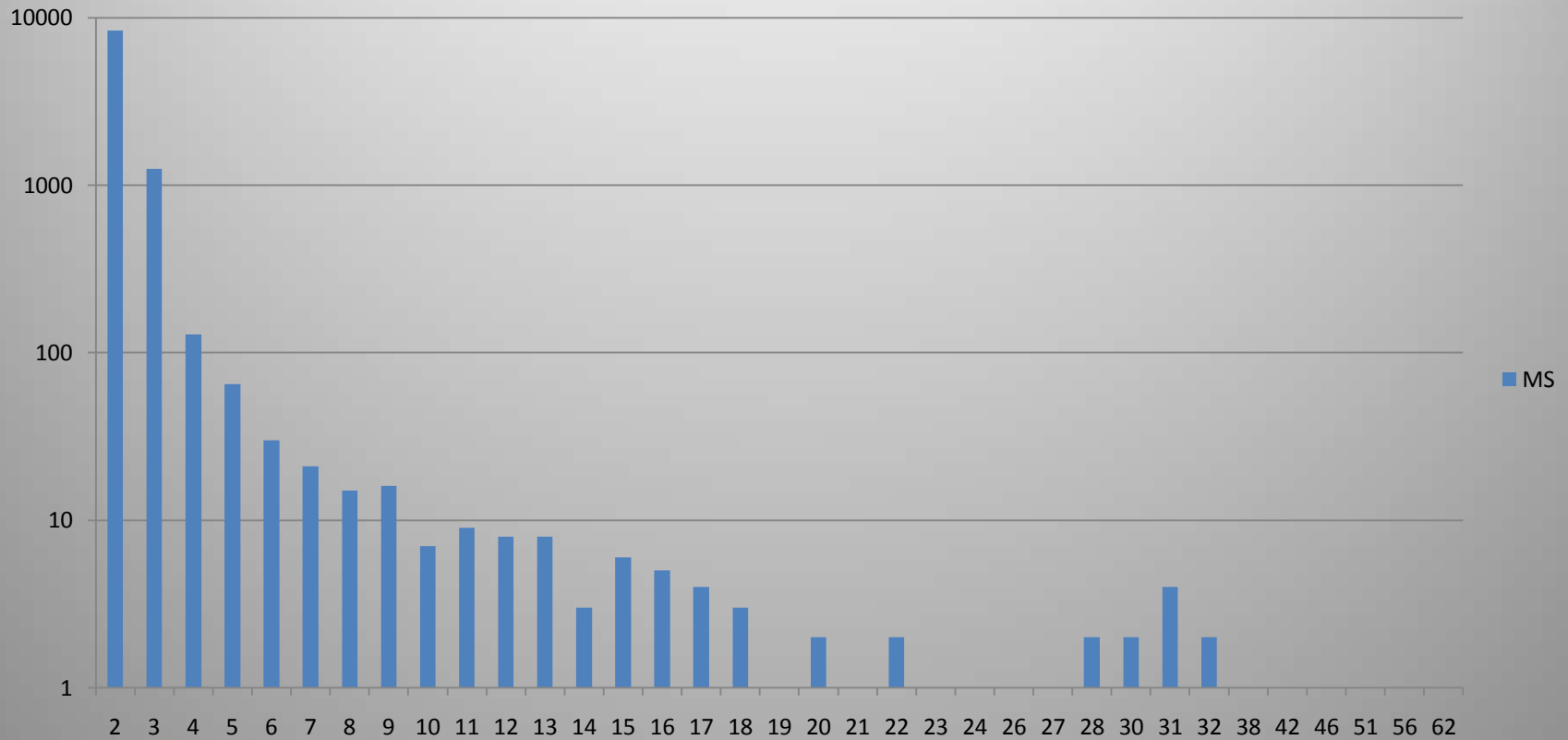
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Latency



Latency

Windows Azure



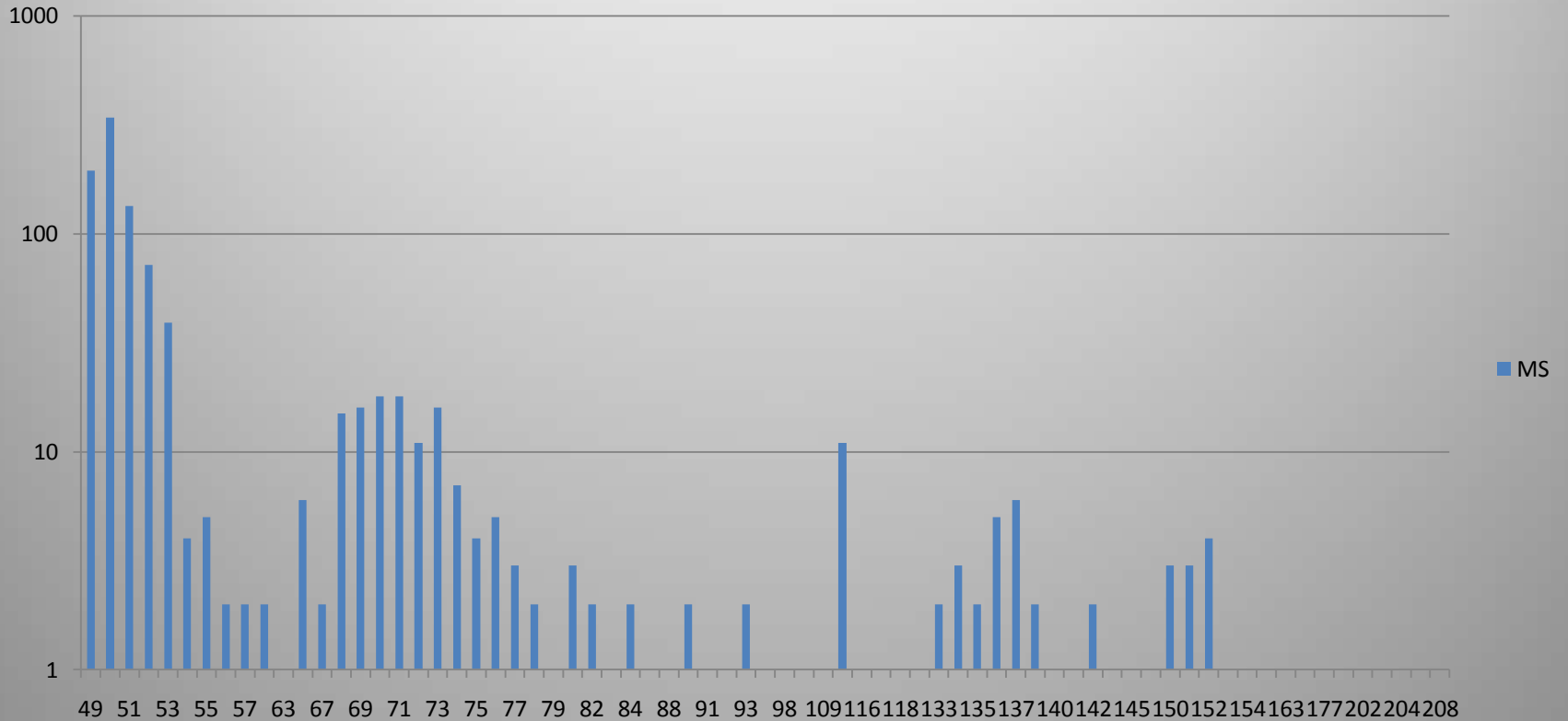
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Latency

Local



“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

Enter your e-mail address:

I am a new user.

I am a returning user, and my password is:

My e-mail address is:

My authentication code is:

Why Use SQL Azure?



Thank you!

For attending this session



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